State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Route To: ☐ Solid Waste ☐ Wastewater ☐ Emergency Response ☒ Haz. Waste ☐ Underground Tanks ☐ Water Resources ☐ Other

Form 4400-122 7-91

Page 1 of 1

Facility / Project Name: MADISON-KIPP CORP. - Waubeasa Street	License/Permit/Monitoring Number:	Boring Number: MW-2A
Boring Drilled By (Firm name and name of crew chief): Badger State Drilling, Kevin McCumber	Date Drilling Started: 07 / 31 / 95 (MM DD YY)	Date Drilling Completed: 07 / 31 / 95 (MM DD YY)
Drilling Method: HSA 4.25" ID 8.25 OD	DNR Facility Well No.:	WI Unique Well No.:
Common Well Name: MW-2A	Final Static Water Level: 839.90 Feet MSL	Surface Elevation: 865.54 Feet MSL
Borehole Diameter: 8.3 Inches	Boring Location: State Plane N ____ E S/C/N; NE 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E	Lat ____ Long ____
Local Grid Location (If Applicable): ____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W	County: DANE	DNR County Code: 1 3
Civil Town/City/ or Village: CITY OF MADISON		

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				See log of MW-2 for stratigraphic information.										
			30	T.D. hole @ 30 feet.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: James D. Schick Firm: Dames and Moore, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

MK003601

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Route To: ☐ Solid Waste ☐ Wastewater ☐ Emergency Response ☑ Haz. Waste ☐ Underground Tanks ☐ Water Resources ☐ Other

Form 4400-122 7-91

Facility / Project Name: MADISON-KIPP CORP. - Waubeasa Street	License/Permit/Monitoring Number:	Boring Number: MW-2
Boring Drilled By (Firm name and name of crew chief): Badger State Drilling, Kevin McCumber	Date Drilling Started: 07 / 31 / 95 (MM DD YY)	Date Drilling Completed: 07 / 31 / 95 (MM DD YY)
Drilling Method: HSA 4.25" ID 8.25 OD	DNR Facility Well No.:	WI Unique Well No.:
Common Well Name: MW-2	Final Static Water Level: 839.55 Feet MSL	Surface Elevation: 865.55 Feet MSL
Borehole Diameter: 8.3 inches	Boring Location: State Plane N E S/C/N; Lat Long	Local Grid Location (If Applicable): ☐ N ☐ E Feet ☐ S Feet ☐ W
NE 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E		
County: DANE	DNR County Code: 1 3	Civil Town/City/ or Village: CITY OF MADISON

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				Blind drilled to 15 feet.										
1	23	23 20 22 23	15	SAND, fine grained, little silt, trace gravel, slightly moist, dense, poorly graded, brown - gravel is angular	SM				42					
			16											
			17											
			18											
			19											
2	18	19 40 33 38	20	SAND, fine grained, some silt, trace gravel, moist, dense, poorly graded, brown - angular fragments of sandstone.					73					
			21											
			22											
			23											
3	6	50/6	24	SAND, fine grained, some silt, trace gravel, wet, very loose, poorly graded, brown					100					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: James D. Selinski Firm: Dames and Moore, Madison, WI

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-2 Use only as an attachment to Form 4400-122.

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
4	5	50/5	25 26 27 28 29 30 31 32 33 34 35	Split spoon refusal @ 34 feet. Bedrock QUARTZ ARENITE, fine grained, friable, white to light tan. - no samples collected below 34 feet. T.D. hole @ 44.5 feet. Set MW-2 @ 44 feet.										

MK003600

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Route To: ☐ Solid Waste ☐ Wastewater ☐ Emergency Response ☑ Haz. Waste ☐ Underground Tanks ☐ Water Resources ☐ Other

Form 4400-122 7-91

Facility / Project Name: MADISON-KIPP CORP. - Waubeasa Street	License/Permit/Monitoring Number:	Boring Number: MW-3
Boring Drilled By (Firm name and name of crew chief): Badger State Drilling, Kevin McCumber	Date Drilling Started: 08 / 01 / 95 (MM DD YY)	Date Drilling Completed: 08 / 01 / 95 (MM DD YY)
Drilling Method: HSA 4.25" ID 8.25 OD	DNR Facility Well No.:	WI Unique Well No.:
Common Well Name: MW-3	Final Static Water Level: 843.38 Feet MSL	Surface Elevation: 867.30 Feet MSL
Borehole Diameter: 8.3 inches	Boring Location State Plane: N. ____ E S/C/N	Lat ___ ___ ___ Long ___ ___ ___
Local Grid Location (If Applicable): ____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W	NE 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E	
County: DANE	DNR County Code: 13	Civil Town/City/ or Village: CITY OF MADISON

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				Blind drilled to 18 feet.										
1	18	27 34 40 50/5	18	SAND, fine grained, some silt, trace gravel, very dense, dry, poorly graded, lt. brown. - angular fragments of standstone.	SM				74					
2	23	21 41 45 50/5	20						86					
3	9	39 50/3	22	Slightly moist.					122					
4	9	48 50/4	24	Moist.					123					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: James D. Schick Firm: Dames and Moore, Madison, WI

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MK003602

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-3 Use only as an attachment to Form 4400-122.

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
					SM									
4	5	27 40 45 50/5	26	@ 26 - 27.2: GRAVEL, little sand, trace silt, wet, very dense, poorly graded, lt. brown.	GM				86					
			27	@ 27.2: SAND, fine grained, some silt, wet, poorly graded, very dense, tan.	SM									
			28											
			29											
			30	T.D. hole @ 29.5 feet. Set well at 28.5 feet.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp	— — — — — — — —	MW-3D

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Dave Cruise	07 / 28 / 99 (MM / DD / YY)	07 / 28 / 99 (MM / DD / YY)	4 1/4" ID HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — — —	— — — — — —	MW-3D	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
NW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E
Lat — — —
Long — — —

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	1 3	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/Comments
			1–9	CLAY, little silt, trace sand, low plasticity, slightly moist, brown.	CL									
			9–14	SAND, some silt, trace clay, fine-grained sand, dry, light brown.	SM									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Robert T. Tauta Firm Dames & Moore, Madison, WI

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-3D

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			15	SAND, some silt, trace clay, fine-grained sand, dry, light brown.	SM									
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32	BEDROCK, SANDSTONE.										
			33											
			34											
			35											
			36											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-3D

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			36	BEDROCK, SANDSTONE.										
			37											
			38											
			39											
			40											
			41											
			42											
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											
			53											
			54											
			55	EOB @ 55 ft.										
			56	Well set @ 53.8 ft.										
			57											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp		MW-3D2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Kevin McCumber	04 / 02 / 01 (MM / DD / YY)	04 / 02 / 01 (MM / DD / YY)	6 1/4" ID HSA

DNR Well ID No.	Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-3D2	_____ Feet MSL	_____ Feet MSL	10 inches

Boring Location
State Plane _____ N. _____ E S/C/N | Lat — — — | Long — — —

NW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	13	City of Madison

Sample Number	Sample Length Recovered (N)	Sample Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/Comments
			1	Blind drilled, no sampling with HSA to 33.0 ft., switched to air rotary										
			2											
			3	Bedrock encountered at 23.0 ft, (sandstone)										
			4											
			5	EOB @ 82.0 ft., well set @ 81.0 ft.										
			6											
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Robert J. Tauta | Firm URS Corporation, Madison, WI

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp Corporation		**MW-3D3**

Boring Drilled By:	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: **Todd** Last Name: **Schmelfeldt** Firm: **Boart Longyear**	**06/06/2012**	**06/28/2012**	**Mud Rotary**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-3D3	**841.97** Feet MSL	**867.61** Feet MSL	**8" to 35' & 6" to 234'**

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane **400120.19** N **2144064.54** E Lat
NW 1/4 **SW** 1/4 of Section **5** , T **7** N, R **10** Long

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	**Dane**	**13**	**Madison**

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
	0.0'		0.0	0.0 - 2.0' No Recovery.				NA						
			1.0											
	1.2'	10 8 8 8	2.0	2.0 - 2.6' SILT: Dark grayish brown (10YR 4/2), trace very fine to fine sand, trace (>1%) subangular to subround fine gravel, trace very fine sand nodules, trace organic mottling, well sorted, stiff, moist, no odor, grades into below.	ML			267 ppm						
			3.0	2.6 - 3.2' CLAY: Dark yellowish brown (10YR 4/6), trace very fine to medium sand, trace fine subangular to subround gravel, trace organic mottling, high plasticity, medium stiff to stiff, moist, no odor.	CH									
	1.4'	3 4	4.0	4.0 - 5.4' CLAY: Dark yellowish brown (10YR 4/4),	CH			33.47 ppm						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Bryan Rudd Ernst Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI 53202 (414) 276-7742

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
		4 4		trace silt, trace very fine to medium sand, trace (>1%) fine subangular to subround gravel, trace gray mottling, little silt 4.1 - 4.2', little sand at base, high plasticity, medium stiff to stiff, moist, no odor.										
			5.0											
				6.0 - 6.2' CLAY: Dark yellowish brown (10YR 4/4), trace silt, trace very fine to medium sand, trace (>1%) fine subangular to subround gravel, trace gray mottling, high plasticity, medium stiff to stiff, moist, no odor.										
	1.5'	2 2 2 2	6.0	6.2 - 7.5' SAND: Strong brown (7.5YR 4/6), very fine to medium- grained, mostly very fine, trace coarse sand, trace fine subangular to subround gravel, trace silt, trace clay, little silt 7.2 - 7.3', trace organic mottling, trace brown mottling, loose to medium dense, moist, no odor.	CH SW			15.71 ppm						
			7.0											
				8.0 - 8.2' CLAY: Yellowish brown (10YR 5/4), trace very fine to fine sand, trace silt, trace (>1%) fine subangular to subround gravel, high plasticity, medium stiff, moist, no odor.										
	0.9'	1 1 1 1	8.0	8.2 - 8.9' SAND: Reddish brown (5YR 4/4), very fine to medium grained, mostly fine, trace coarse sand, trace fine subangular to subround gravel, 1/8 inch dolomite subangular gravel at 8.8', trace organics (roots), trace organic staining, trace orange mottling, trace gray mottling 8.5-8.8', trace clay nodules, poorly sorted, moist to wet, no odor.	CH SW			4.41 ppm						
			9.0											
				10.0 - 10.2' SAND: Reddish brown (5YR 4/4), very fine to medium grained, mostly fine, trace coarse sand, trace fine subangular to subround gravel, trace organics (roots), trace organic staining, trace orange mottling, trace gray mottling 8.5 - 8.8', trace clay nodules, poorly sorted, moist to wet, no odor.										
	1.2'	5 7 8 10	10.0	10.2 - 11.2' SAND: Yellowish brown (10YR 5/4), very fine to coarse grained, mostly fine, trace fine to medium subangular to subround gravel, some up to 1 inch, trace silt, trace orange mottling, slightly cohesive, medium dense, moist, no odor.	SW SW			2.94 ppm						
			11.0											
				12.0 - 12.2' SAND: Yellowish brown (10YR 5/4), very fine to coarse grained, mostly fine, trace fine to medium subangular to subround gravel, some up to 1", trace silt, trace orange mottling, slightly cohesive, medium dense, moist, no odor.										
	0.5'	8 8 11 9	12.0	12.2 - 12.5'	SW SW			3.83 ppm						

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
			13.0	SAND: Very dark brown (10YR 3/3), very fine to medium- grained, mostly fine, trace fine subround gravel 12.4-12.5', well sorted, dense, moist, no odor.										
	0.5'	6 16 20 23	14.0	14.0 - 14.5' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly very fine, trace clay, trace silt, little subangular to subround fine to medium gravel, mostly dolomite, poorly sorted, dense, moist to wet, no odor.	SW			3.47 ppm						
			15.0											
	0.0'	15 16 18 17	16.0	16.0 - 18.0' No Recovery.				NA						
			17.0											
	1.2'	20 18 15 14	18.0	18.0 - 19.2' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly very fine, trace clay, trace silt, some subangular to subround fine to medium gravel, mostly dolomite, some up to 1 inch, fractured dolostone 18.3 - 18.4', somewhat cohesive, poorly sorted, dense, moist to wet, no odor.	SW			4.74 ppm						
			19.0											
	1.3'	8 10 12 16	20.0	20.0 - 21.3' SAND: Yellowish brown (10YR 5/4), very fine to medium grained, mostly very fine, trace coarse sand, little silt, trace to little fine subangular to subround gravel, some up to 1 inch, cohesive, dense to very dense, slow dilatancy, moist, no odor.	SW			3.89 ppm						
			21.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	1.1'	40 45 43 50-0.4"	22.0	22.0 - 23.1' SAND: Yellowish brown (10YR 5/4), very fine to medium grained, mostly very fine, trace coarse sand, little silt, fine to medium subangular to subround gravel, some up to 1", cohesive, dense to very dense, slow dilatancy, moist to wet, no odor.	SW			5.11 ppm						
	0.1'	50-0.2'	24.0	24.0 - 24.1' SAND: Yellowish brown (10YR 5/4), very fine to medium grained, mostly very fine, trace coarse sand, little silt, fine to medium subangular to subround gravel, some up to 1 inch, cohesive, dense to very dense, slow dilatancy, moist to wet, no odor.	SW			3.05 ppm						
			25.0											
			26.0	26.0 - 31.0' BLIND DRILL: Refusal at 26'. Switched bits to determine if bedrock has been reached or if a thick gravel layer has been encountered. Gravel layer had been encountered. Blind drilled to bedrock at 31'. Note: Temporary casing set to 35'.										
			27.0											
			28.0											
			29.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
			30.0											
			31.0											
			32.0											
			33.0											
	3.1'		34.0	34.0 - 91.8' Tunnel City Group Lone Rock Formation				5.8 ppm						0% Very Poor

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
				SANDSTONE: Very fine to medium grained, subangular to subround grains, moderately hard to soft, moderate to well cemented, intensely jointed, joints are horizontal, planar to cross bedded, laminated to very thin beds, rip up clasts, trace to little pores and pits, secondary mineralization throughout, glauconite lamina, iron staining, feldspathic sands to 35.5', moderate to high energy near shore environment.										
			35.0											
(35.1 - 35.2') VOCs BET				34.0 - 34.2' SANDSTONE: Light brown (7.5 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Glauconite: 10%, fine grained, very well sorted, moderately hard, quartz cement, well cemented, trace pores throughout (<1mm), iron staining on outside of core as well as on fracture surface, secondary mineralization of iron, healed vertical fractures filled with iron precipitate and clay on horizontal fracture surfaces, weathered horizontal fracture surfaces.										
			36.0	34.2 - 35.6' GLAUCONITIC SANDSTONE: Pale brown (10 YR 6/3). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite: 20%, fine grained, moderately sorted, moderately hard, quartz and iron precipitate cement, moderately well cemented, little pits and pores throughout, larger pores contain calcite and iron secondary mineralization, iron staining on outside of core as well as on the fracture surface, healed vertical fractures filled with very fine sand and iron precipitate, weathered horizontal fracture surfaces, laminated glauconite beds ranging from 1/16 - ¼", rip up clasts containing parent material cemented throughout, horizontal hairline fractures.										
(36.2 - 36.3') VOCs BET			37.0											
				35.6 - 36.9' SANDSTONE: Light grey (10 YR 7/1). Sand: 90%, very fine to fine grained, subangular to subrounded, Glauconite: 10%, fine grained, laminated, very well sorted, soft, weakly cemented with quartz, friable, trace pits throughout, iron staining on outside of core as well as on the fracture surface, moderate bioturbation, burrows filled with clay and iron precipitate, no discernable bedding in locations with heavy bioturbation, areas with less bioturbation bedding is very thin and laminated, 36.29-36.45' displays cross bedding with glauconite lamina, healed vertical fractures filled with iron precipitate, weathered horizontal fracture surfaces.										
			38.0											
				39.0 - 39.4' SANDSTONE: Light grey (10 YR 7/1). Sand: 95%, very fine to fine grained,										

Sample											Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				subangular to subrounded, Glauconite: 5%, fine to medium grained, laminated layers and fine grained size pieces throughout, sandstone is very well sorted, moderately hard, moderately well cemented, moderately weathered, laminated bedding, trace pits to pores, little bioturbation, burrows filled with clay and iron precipitate, fractures present at high angles to bedding, fractures filled with secondary iron and clay precipitation.										
	4.8'		39.0					6.3 ppm						38.3% Poor
(39.3 - 39.8) PHYS PROP				Physical Properties Sample						9.4%				
(39.8 - 39.9') VOCs BF			40.0	39.9 - 40.6' SANDSTONE: Yellowish brown (10 YR 5/8). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay: 20%, sandstone is moderately well sorted, moderately hard, moderately weathered, well cemented with clay and iron precipitate, iron staining on outside of core as well as on fracture surfaces, thinly bedded, little pits throughout, horizontal fractures filled with secondary iron precipitation and very fine sand and clay, trace burrows filled with clay and iron precipitate.										
(40.2 - 40.3') VOCs f4														
			41.0	40.6 - 42.9' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Glauconite: 10%, very fine grain sized grains throughout as well as ½" wide lenses, sandstone is very well sorted, moderately hard, moderately well cemented to friable, moderate weathering, medium bedding, trace pits, highly bioturbated where burrows are filled with clay and iron precipitate, healed horizontal hairline fractures, several horizontal fractures that are filled with secondary mineralization of iron and calcite as well and very fine sand and clay, trace pyrite precipitation in horizontal hairline fractures at 41.95'.										
(42 - 42.1') VOCs BET			42.0											
(42.8 - 42.9') VOCs				42.9 - 43.8'										
			43.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			43.0											
AF				GLAUCONITIC SANDSTONE: Pale brown (10 YR 6/3). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite: 20%, fine grained, moderately well sorted, laminated cross beds, laminated glauconite beds ranging from 1/16 - ¼", moderately hard, quartz and iron precipitate cement, well cemented, little pits and pores throughout, larger pores contain calcite and iron secondary mineralization, iron staining on outside of core as well as on the fracture surface, healed vertical fractures filled with very fine sand and iron precipitate, weathered horizontal fracture surfaces.										
	4.7		44.0	44.0' - 44.9' GLAUCONITIC SANDSTONE: Pale brown (10 YR 6/3). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite: 20%, fine grained, moderately well sorted, laminated cross beds, laminated glauconite beds ranging from 1/16 - ¼", moderately hard, quartz and iron precipitate cement, well cemented, little pits and pores throughout, larger pores contain calcite and iron secondary mineralization, rip up clasts containing parent sediment rimmed with iron precipitate, iron staining on outside of core as well as on the fracture surface, healed horizontal fractures filled iron precipitate, weathered horizontal fracture surfaces.				6.0 ppm						40% Poor
(44.6 - 44.7') VOCs BET			45.0											
(45.6 - 45.7') VOCs BF			46.0	44.9 - 45.9' SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay: 5%, sandstone is very well sorted, fine grained, moderately well cemented with quartz cement, moderately hard, slight weathering, laminated cross bedding, weakly bedded, trace bioturbation where burrows are filled with clay and iron precipitate, trace pores throughout, horizontal hairline fractures filled with clay and very fine sand, secondary mineralization of iron on outside of core as well as fracture surfaces, horizontal fracture surfaces display clay and very fine sand infilling.										
(46.9 - 47') VOCs AF			47.0	45.9 - 46.2' SANDSTONE: Yellowish brown (10 YR 5/8). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay: 20%, sandstone is moderately well sorted, moderately hard, moderately weathered, well cemented with clay and iron precipitate, iron staining on outside of core as well as on fracture surfaces, thinly bedded, little pits throughout, horizontal fractures filled with secondary iron precipitation and very fine sand and clay, trace burrows filled with clay and iron precipitate.										
				46.2 - 46.4'										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(48.2 - 48.3') VOCs BET			48.0	SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay: 5%, sandstone is very well sorted, fine grained, moderately well cemented with quartz cement, moderately hard, slight weathering, laminated cross bedding, weakly bedded, trace bioturbation where burrows are filled with clay and iron precipitate, trace pores throughout, horizontal hairline fractures filled with clay and very fine sand, secondary mineralization of iron on outside of core as well as fracture surfaces, horizontal fracture surfaces display clay and very fine sand infilling.										
				46.4 - 46.6' GLAUCONITIC SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, moderately weathered, well cemented with clay and iron precipitate, iron staining on outside of core as well as on fracture surfaces, horizontal fracture surfaces in filled with very fine sand and iron precipitate, horizontal hairline fractures healed with iron precipitate, trace pores throughout, rip up clasts contain parent sediment that is rimmed with glauconite and iron precipitate.										
	3.6'		49.0	46.6 - 47.2' SANDSTONE: Very pale brown (10 YR 8/2). Sand: ~100%, very fine to medium grained, mostly very fine to fine grained, subangular to subrounded, trace glauconite from 46.61 - 46.66', sandstone is very well sorted, fine grained, well cemented with quartz cement, moderately hard, very slight weathering, thinly bedded, little pores to vugs throughout, vugs are filled with secondary mineralization of euhedral calcite grains, some pits are completely filled with calcite, secondary mineralization of iron precipitate in healed horizontal fractures and on open horizontal fractures, open fractures are rough and irregular displaying infilling, iron staining on outside of core as well as on fresh fracture faces.				5.8 ppm					0% Poor
(49.9 - 50') VOCs BET			50.0											
(51 - 51.1') VOCs BET			51.0	47.2 - 48.7' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, fine grained, moderately hard, moderately weathered, well cemented with quartz and iron precipitate, iron staining on outside of core as well as on fracture surfaces, thinly bedded, little pores to vugs throughout, vugs range in openness up to ¼", vugs contain secondary mineralization of euhedral calcite grains and iron precipitate, secondary										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			52.0	mineralization of iron precipitate in healed horizontal fractures and on open horizontal fractures, open fractures are rough and irregular displaying infilling.										
(52.2 - 52.3') VOCs BET			53.0	49.0 - 51.0' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Glauconite: 10%, fine grain sized glauconite throughout as well as laminated glauconite beds, sandstone is well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, weakly thinly bedded, beds are poorly displayed due to severe bioturbation, burrows are filled with clay and iron precipitate, moderately well cemented to friable where strata display higher percentages of bioturbation, horizontal hairline fractures healed with iron precipitate and clay, intensely jointed, horizontal fractures are smooth and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
	2.6'		54.0	51.0 - 51.4' GLAUCONITIC SANDSTONE: Pale brown (10 YR 6/3). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite: 20%, sandstone is fine grained, well sorted, laminated cross beds, laminated glauconite beds ranging from 1/16 - ¼", moderately hard, quartz and iron precipitate cement, moderately cemented to friable, little pits and pores throughout, secondary mineralization of iron precipitate, iron staining on outside of core as well as on the fracture surface, healed horizontal fractures filled iron precipitate, weathered horizontal fracture surfaces.				5.7 ppm					18.3% Very Poor
(54.6 - 54.7') VOCs BET			55.0	51.4 - 52.1' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal fractures, well cemented with quartz and iron precipitate, iron staining on outside of core as well as on fracture surfaces, thinly bedded, trace bioturbation, burrows filled with clay and iron precipitate, little pores to pits throughout, secondary mineralization of euhedral calcite grains and iron precipitate in pits and fracture faces, secondary mineralization of iron precipitate in healed horizontal fractures and on open horizontal fractures, intensely jointed, fractures range in attitude from horizontal to shallow angle, open fractures are rough and irregular displaying infilling.									
(56 - 56.1') VOCs			56.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
BET			57.0	52.0 - 52.6' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, very thinly bedded, beds are poorly displayed due to severe bioturbation, burrows are filled with clay and iron precipitate, moderately well cemented to friable where strata display higher percentages of bioturbation, horizontal hairline fractures healed with iron precipitate and clay, intensely jointed, horizontal fractures are smooth and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
			58.0	54.0 - 54.1' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, very thinly bedded, bioturbation visible on open horizontal fracture faces, burrows are filled with clay and iron precipitate, well cemented, horizontal fractures are smooth and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
			59.0	54.1 - 56.0' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to vugs throughout, vugs range in openness up to ¼", vugs contain secondary mineralization of euhedral calcite grains and iron precipitate, secondary mineralization of iron precipitate in healed horizontal fractures, highly jointed, open horizontal fractures are rough and irregular displaying infilling.				4.9 ppm					100% Excellent
(59.4 - 59.5') VOCs BF	0.6'													
	3.12'		60.0	56.0 - 59.6' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on				5.1 ppm					29% Poor

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
(60.7 - 60.8') VOCs BF			61.0	outside of core as well as on fracture surfaces, little pores to pits throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, secondary mineralization of iron precipitate in healed horizontal fractures, open horizontal fractures are rough and irregular displaying infilling.										
(60.8 - 61.3) PHYS PROP (61.5 - 61.6') VOCs BET			62.0	59.6 - 59.8' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, very thinly bedded, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, trace pores throughout, secondary mineralization of iron precipitate in healed horizontal fractures, open horizontal fractures are rough and irregular displaying infilling of clay and very fine sand.						9.9%				
			63.0	59.8 - 60.5' SANDSTONE: Yellow (10 YR 7/8). Sand: 95%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay and Iron Precipitate: 5%, sandstone is very well sorted, soft and friable, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, thinly bedded, bioturbated with burrows filled by clay and iron precipitate, poorly cemented, secondary mineralization of iron precipitate on outside of core as well as on open horizontal fractures and healed horizontal hairline fractures, open horizontal fractures are smooth to rough as they are very friable and display in filling of clay and very fine sand.										
			64.0	60.5 - 61.3' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores, secondary mineralization of iron precipitate in healed horizontal fractures, highly jointed, open horizontal fractures are rough and irregular displaying infilling.										
(64.6 - 64.7') VOCs BF	5.0'			Physical Properties Sample				5.0 ppm						71.7% Fair
				61.9 - 62.1' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay										
			65.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			65.0	and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores, secondary mineralization of iron precipitate in healed horizontal fractures, highly jointed, open horizontal fractures are rough and irregular displaying infilling.										
(65.4 - 65.5') VOCs BET				62.1 - 62.5' GLAUCONITIC SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite and iron precipitate: 20%, glauconite is fine grain sized and throughout the sandstone as well as in laminated beds, sandstone is moderately well sorted, soft to moderately hard, fine grained, thinly bedded, severe weathering on outside of core and on horizontal fracture faces, moderate to poor cementation of quartz and iron precipitate, semi-friable, little pits and pores throughout, secondary mineralization of iron precipitate, iron staining on outside of core as well as on the fracture surface, intensely jointed, healed horizontal fractures filled iron precipitate, open horizontal fracture surfaces are rough and irregular displaying in filling of clay and very fine sand, horizontal fractures are located at bedding planes where laminated glauconite beds are present.										
			66.0											
(66.4 - 66.5') VOCs BF														
			67.0											
(67.3 - 67.4') VOCs BF				62.5 - 62.6' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 95%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay and Iron Precipitate: 5%, sandstone is very well sorted, very soft and friable, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, thinly bedded, very poorly cemented, secondary mineralization of iron precipitate on outside of core as well as on open horizontal fractures.										
			68.0											
(68.5 - 68.6') VOCs BET				64.6 - 67.1' SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay and Iron Precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, medium bedding, bioturbated with burrows filled by clay and iron precipitate, moderate quartz cementation, secondary mineralization of iron precipitate on outside of core as well as on open horizontal fractures and healed horizontal hairline fractures, open horizontal fractures are smooth to rough										
			69.0											

Sample									Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				as they are friable and display in filling of clay and very fine sand.										
	5.0'			67.1 - 67.9' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores and pits throughout, trace glauconite lenses, secondary mineralization of iron precipitate in healed horizontal hairline fractures, moderately jointed, open horizontal fractures are rough and irregular displaying in filling of clay and very fine sand.				4.5 ppm						46.7% Poor
			70.0											
(70.2 - 70.3') VOCs BF														
(70.6 - 70.7') VOCs f5														
				67.9 - 69.6' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is very well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, trace fine grained sized glauconite grains throughout, severe bioturbation, burrows are filled with clay and very fine sand and rimmed by iron precipitate, iron precipitate filling healed horizontal hairline fractures, secondary mineralization on open horizontal fractures that are rough and irregular displaying infilling of clay and very fine sand.										
			71.0											
(71.7 - 71.8') VOCs BF														
			72.0											
				69.6 - 70.0' SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay: 5%, sandstone is very well sorted, fine grained, moderately well cemented with quartz cement, moderately hard, slight weathering, laminated cross bedding, weakly bedded, trace bioturbation where burrows are filled with clay and iron precipitate, trace pores throughout, horizontal hairline fractures filled with clay and very fine sand, secondary mineralization of iron on outside of core as well as fracture surfaces, horizontal fracture surfaces display clay and very fine sand infilling, very thin glauconite bed at base of sandstone strata.										
(72.9 - 73') VOCs BF			73.0											
				70.0 - 71.2' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard,										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
			74.0	fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, trace bioturbation with burrows filled by clay and rimmed with iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to pits throughout, secondary mineralization of iron precipitate in healed horizontal hairline fractures, open horizontal fractures are rough and irregular displaying in filling of clay and very fine sand as well as iron precipitate.										
(74.7 - 74.8') VOCs f7	4.8'		75.0	71.2 - 71.8' SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay: 5%, sandstone is very well sorted, fine grained, moderate to poorly cemented with quartz cement, soft and semi-friable, slight weathering, laminated cross bedding, weakly bedded, trace bioturbation where burrows are filled with clay and iron precipitate, trace pores throughout, horizontal hairline fractures filled with clay and very fine sand, secondary mineralization of iron on outside of core as well as fracture surfaces, horizontal fracture surfaces are soft and irregular due to the friability of the sandstone and display clay and very fine sand infilling.				NM						68.3% Fair
(75.5 - 75.6') VOCs BF			76.0	71.8 - 74.6' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is very well sorted, moderately hard to soft, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, thinly bedded, moderately well cemented with quartz and iron precipitate, trace fine grained sized glauconite throughout as well as interbedded glauconite lenses and laminated beds, alternating 2-3" beds of horizontally bedded laminated undisturbed sandstone and thinly bedded heavily bioturbated sandstone, bioturbated beds display severe bioturbation where bedding is non-discernible, burrows are filled with clay and very fine sand and rimmed by iron precipitate, iron precipitate fills healed horizontal hairline fractures, secondary mineralization exists on open horizontal fractures, fractures are rough and irregular displaying infilling of clay and very fine sand.										
(76.6 - 76.7') VOCs BF			77.0											
			78.0	74.6 - 77.6' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is well sorted, moderately hard, fine grained, moderate weathering displayed										
(78.1 -														

Sample									Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
78.2') VOCs AF				on outside of core as well as on horizontal open fractures, medium bedding, interbedded glauconite lenses, little bioturbation where burrows filled with clay and very fine sand and rimmed with iron, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, secondary mineralization of iron precipitate in healed horizontal hairline fractures, highly jointed, open horizontal fractures are rough and irregular displaying in filling of clay and very fine sand as well as iron precipitate.										
			79.0	77.6 - 78.9' SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay: 5%, sandstone is very well sorted, fine grained, moderately well cemented with quartz cement, moderately hard, slight weathering on outside of core and fracture faces, laminated horizontal and cross bedding, trace bioturbation where burrows are filled with clay and iron precipitate, trace horizontal healed hairline fractures filled with iron precipitate, secondary mineralization of iron on outside of core as well as fracture surfaces, horizontal fracture surfaces display clay and very fine sand infilling.										
	4.1'							4.6 ppm						36.7% Poor
(79.7 - 79.8') VOCs BF			80.0	78.9 - 79.4' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, interbedded glauconite lenses, some bioturbation where burrows filled with clay and very fine sand and rimmed with iron, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, secondary mineralization of iron precipitate in healed horizontal hairline fractures, highly jointed, open horizontal fractures are rough and irregular displaying in filling of clay and very fine sand as well as iron precipitate.										
(80.6 - 80.7') VOCs BET			81.0	79.6 - 82.8' SANDSTONE: Very pale brown (10 YR 7/3). Sand: 90%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is well sorted, moderately hard to soft, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, medium irregular beds, highly jointed, severe bioturbation with burrows filled by clay and rimmed with iron precipitate, trace fine grained sized glauconite throughout, thin bed of intensely jointed laminated glauconite with little fine grained sand from 82.0-										
(81.4 - 81.5') VOCs BET			82.0											
(82.3 - 82.4') VOCs AF														

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
			83.0	82.4', moderately well cemented with clay and quartz cement, secondary mineralization of iron precipitate and calcite on open horizontal fractures, healed hairline fractures are filled with clay and iron precipitate, open horizontal fracture faces are irregular and semi-rough to soft displaying in filling of clay and very fine sand.										
(82.6 - 83.1) PHYS PROP			84.0	82.8 - 83.3' SANDSTONE: Very pale brown (10 YR 7/3). Sand: 95%, very fine to fine grained, subangular to subrounded, Glauconite: 5%, fine grained, sandstone is very well sorted, moderately well cemented, soft and semi-friable, fine grained, slightly weathered on outside of core and on open fracture faces, very thinly bedded, little bioturbation where burrows are filled with clay and very fine sand, glauconite lens at base of sandstone, secondary mineralization of iron precipitate on open fractures, open horizontal fracture faces are soft and smooth displaying in filling of clay and very fine sand. Physical Properties Sample					13.0%				
(84.7 - 84.8') VOCs f6	4.8'		85.0	84.6 - 87.7' SANDSTONE: Very pale brown (10 YR 7/3). Sand: 90%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is well sorted, moderately hard to soft, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, medium irregular beds, highly jointed, severe bioturbation with burrows filled by clay and rimmed with iron precipitate, trace fine grained sized glauconite throughout, moderately cemented where strata display less bioturbation to poorly cemented where bioturbation is more severe, friable in poorly cemented strata, secondary mineralization of iron precipitate, healed hairline fractures are filled with clay and iron precipitate, open horizontal fracture faces are irregular and soft displaying in filling of clay and very fine sand.				9.3 ppm						65% Fair
(85.6 - 85.7') VOCs BET			86.0											
(86.3 - 86.4') VOCs f7														

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
			87.0											
(88 - 88.1') VOCs BF			88.0	87.7 - 89.0' GLAUCONITIC SANDSTONE: Pale olive (5Y 6/3). Sand 80%, very fine to fine grained, subangular to subrounded, Glauconite and clay: 20%, fine grained in size, sandstone is moderately well sorted, very soft, fine grained, severe weathering of the core where strata falls apart, thinly bedded, highly jointed, severe bioturbation with burrows filled by clay and rimmed with iron precipitate, some fine grained glauconite throughout as well as glauconite lenses and very thin glauconite beds, poor to very poorly cemented and friable, secondary mineralization of iron precipitate, open horizontal fracture faces are irregular and soft due to the friability of the sandstone and display in filling of clay and very fine sand as well as iron precipitate, fractures occur at glauconitic bedding planes.										
			89.0	89.0 - 89.4 SANDSTONE: Very pale brown (10 YR 7/3). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is well sorted, moderately hard, fine grained, slight weathering on the outside of the core as well as on the fracture faces, thinly bedded, bioturbation with burrows filled by clay and rimmed with iron precipitate, moderately well cemented, secondary mineralization of iron precipitate, healed horizontal hairline fractures are filled with iron precipitate, open horizontal fracture faces are smooth and displaying in filling of clay and very fine sand as well as iron precipitate.										
	4.7'		90.0					20 ppm						78.3% Good
(90.5 - 90.6') VOCs AF				89.6 - 91.8' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 70%, very fine to fine grained, subangular to subrounded, Glauconite and iron precipitate: 30%, sandstone is moderately sorted, soft to moderately hard, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, medium irregular beds, moderately jointed, severe bioturbation with burrows filled by clay and rimmed with iron precipitate, trace pores to vugs throughout, vugs range in openness up to 1-1/2" and contain euhedral calcite, little fine grained sized glauconite throughout as well as thinly bedded glauconite layers, moderately well cemented where lower percentages of glauconite exist to poorly										
			91.0											
(91.2 - 91.3') VOCs														

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
BF				cemented where there are higher percentages of glauconite, friable in poorly cemented strata, secondary mineralization of iron precipitate and calcite, healed hairline fractures are filled with clay and iron precipitate, open horizontal fractures occur at bedding planes and have faces that are irregular and soft which display in filling of clay and very fine sand, increasing glauconite percentages with depth.										
(92 - 92.1') VOCs f10			92.0	91.8 - 100.1' Elk Mound Group Wonewoc Formation: Ironton (Transition) Member Sandstone: Very fine to medium grained, soft to moderately hard, poorly to well cemented, friable, moderately to highly jointed, joints are horizontal to low angle at bedding planes, planar to cross bedding, low angle cross beds (up to 30 degrees), laminated to very thin beds, iron staining throughout, glauconitic to 96', moderate energy nearshore environment.										
(92.8 - 92.9') VOCs f18			93.0	91.8 - 94.3' SANDSTONE: Olive yellow (5Y 6/6). Sand: 95%, fine grained, subangular to subrounded, Glauconite: 5%, fine grained in size throughout, sandstone is very well sorted, moderately hard, fine grained, slight weathering on outside of core as well as open fracture faces, laminated horizontal and cross beds, intensely to highly jointed with fractures occurring at bedding planes, trace bioturbation where burrows are filled with clay and very fine sand, trace pits to pores throughout, moderately well cemented, secondary mineralization of iron precipitate on the outside of the core and fracture faces as well as throughout the sandstone, healed horizontal hairline fractures are filled with very fine sand and iron precipitate, iron nodules exist throughout the sandstone where they are heavily oxidized, sandstone contains bands of laminated iron oxidized/stained beds, open horizontal fractures have faces that are smooth and soft which display infilling of clay and very fine sand.										
(94.6 - 94.7') VOCs BET	4.9'		94.0	94.6 - 98.2' SANDSTONE: Olive yellow (5Y 6/6). Sand: 95%, fine grained, subangular to subrounded, Glauconite: 5%, fine grained in size throughout, sandstone is very well sorted, soft to moderately hard, fine grained, slight weathering on outside of core as well as open fracture faces, laminated horizontal and cross beds, intensely to highly jointed with fractures occurring at bedding planes, trace bioturbation where burrows are filled with clay and very fine sand, trace pits to pores throughout, trace clay lenses rimmed with iron precipitate, moderately				7.1 ppm						63.3% Fair
(95.5 - 95.6') VOCs BET			95.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			96.0	well cemented, secondary mineralization of iron precipitate on the outside of the core and fracture faces as well as throughout the sandstone, healed horizontal hairline fractures are filled with very fine sand and iron precipitate, iron nodules exist throughout the sandstone where they are heavily oxidized, sandstone contains bands of laminated iron oxidized/stained beds, open fractures are horizontal to shallow and have faces that are smooth and soft which display infilling of clay and very fine sand.										
(96.4 - 96.5') VOCs BF														
			97.0											
(97.5 - 97.6') VOCs f8														
			98.0	98.2 - 99.5' SANDSTONE: Brownish yellow (10 YR 6/6). Sand: 95%, fine grained, subangular to subrounded, Glauconite and Iron precipitate: 5%, fine grained in size throughout, sandstone is very well sorted, soft to moderately hard, fine grained, moderately severe weathering on outside of core as well as open fracture faces, laminated horizontal and cross beds, intensely jointed with fractures occurring at bedding planes, trace pores throughout, moderately well cemented, secondary mineralization of iron precipitate on the outside of the core and fracture faces as well as throughout the sandstone, healed to moderately healed horizontal hairline fractures are filled with clay and iron precipitate, iron nodules exist throughout the sandstone where they are heavily oxidized, heavy iron staining throughout, sandstone contains bands of laminated iron oxidized/stained beds, open fractures are horizontal to shallow and have faces that are smooth to irregular and soft which display infilling of clay and very fine sand.										
(98.3 - 98.4') VOCs AF														
			99.0											
(99.5 - 99.6') VOCs BF														
	4.6'			100.1 - 124.6' Elk Mound Group Wonewoc Formation: Ironton Member				1.9 ppm						40% Poor
			100.0	Sandstone: Fine to medium grained, subround to round grains, moderately hard to soft, moderately cemented, highly to intensely jointed, joints are horizontal, planar to cross bedding, laminated beds,										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
				friable, trace iron staining, trace pores to pits, trace glauconite, moderate energy nearshore environment.										
(100.8-100.9') VOCs BF			101.0	99.6 - 100.7' SANDSTONE: Very pale brown (10 YR 7/3). Sand: 80%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately sorted, hard to moderately hard, fine grained, slight weathering on the outside of the core as well as on the fracture faces, thinly bedded, highly jointed, severe bioturbation with burrows filled by clay and rimmed with iron precipitate, little fine grained sized glauconite throughout as well as laminated beds, glauconite percentages as well as degree of iron staining increase with depth, well to moderately well cemented with clay and quartz, secondary mineralization of iron precipitate on open horizontal fractures, healed hairline fractures are filled with clay and iron precipitate, open horizontal fracture faces are irregular and semi-rough displaying in filling of clay and very fine sand.										
(102-102.1') VOCs BF			102.0	NOTE: Wonewoc Ironton member begins at ~100.1' bgs.										
				100.7 - 101.9' SANDSTONE: Very pale brown (10 YR 7/4). Sand: 95%, very fine to medium grained, predominately fine grained, subangular to subrounded, Clay: 5%, sandstone is moderate to poorly sorted, moderately hard, fine grained, slightly weathered on the outside of the core as well as on the fracture faces, laminated to very thinly bedded, highly jointed, trace bioturbation with burrows filled by clay and very fine sand, moderately well cemented with quartz and clay, secondary mineralization of iron precipitate on open horizontal fractures, heavy iron precipitation and staining from oxidation from 100.8-101.2', healed hairline fractures are filled with clay and very fine sand as well as iron precipitate, open fractures are horizontal to shallow and are irregular and rough displaying in filling of clay and very fine sand as well as iron precipitate.										
(103.1-103.2') VOCs BF			103.0							11.4%				
(102.6-103.1) PHYS PROP				101.9 - 103.1' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, laminated and cross bedding, intensely jointed, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, trace iron oxidation on fracture faces, open fractures occur at bedding										
			104.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
	4.8'			planes and are horizontal and smooth displaying infilling of clay and very fine sand.				4.3 ppm						45% Poor
				Physical Properties Sample										
(105.1-105.2') VOCs BF			105.0	103.7 - 104.2' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, laminated and cross bedding, intensely jointed, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, trace iron oxidation on fracture faces, open fractures occur at bedding planes and are horizontal and smooth displaying infilling of clay and very fine sand.										
(106.4-106.5') VOCs BF			106.0	104.6 - 109.4' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, laminated and cross bedding, intensely jointed, more friable in strata that display greater degree of jointing, trace pores and pits throughout, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, trace iron oxidation on fracture faces, open fractures occur at bedding planes and are horizontal and smooth displaying infilling of clay and very fine sand.										
(107.5-107.6') VOCs BF			107.0											
(108.3-108.4') VOCs BET			108.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
			109.0											
	4.9'			109.6 - 114.5' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and display cross bedding (~10 degrees), highly jointed, semi-friable in strata that display a greater degree of fracturing, trace pores and pits throughout, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace iron oxidation on fracture faces, trace high angle fractures, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.				3.7 ppm						43.3% Poor
(110.3-110.4') VOCs AF			110.0											
			111.0											
(111.5-111.6') VOCs AF														
			112.0											
(112.1-112.2') VOCs BET														
(112.9-113') VOCs BF			113.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
			114.0											
(114.6-114.7') VOCs BF	4.9'		115.0	**114.6 - 119.5'** SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and display cross bedding (~20 degrees), highly jointed, semi-friable in strata that display a greater degree of fracturing, trace pores and pits throughout, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace iron oxidation on fracture faces, trace high angle fractures, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.				6.1 ppm							50% Fair
(115.5-115.6') VOCs BET			116.0											
(116.9-117') VOCs BF			117.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(118.1-118.2') VOCs BF			118.0											
			119.0											
(119.6-119.7') VOCs BET	4.8'			119.6 - 121.4' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and also display shallow angle cross bedding, highly jointed, semi-friable in strata that display a greater degree of fracturing, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, trace iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand as well as iron precipitate, sandstone changes color from a light grey to a more pale green sand from 120.7-121.4'				4.9 ppm							43.3% Poor
			120.0											
(120.9-121') VOCs BET			121.0											
(120.9-121.4) PHYS PROP				Physical Properties Sample						11.3%				
(121.9-122') VOCs BF			122.0	121.8 - 124.4' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%,										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(122.7-122.8') VOCs BF			123.0	sandstone is moderately well sorted, moderately hard to hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and also display shallow angle cross bedding, highly jointed, semi-friable in strata that display a greater degree of fracturing, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, trace iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand as well as iron precipitate.										
			124.0											
(124.7-124.8') VOCs BF	4.8'		125.0	124.6 - 222.1' Elk Mound Group Wonewoc Formation: Galesville Member Sandstone: Fine to medium grained, soft to moderately hard, poorly to well cemented, friable, highly jointed, joints are horizontal at bedding planes, trace high angle hairline vertical fractures, planar to cross bedding, laminated to very thin beds, little to some iron staining at bedding planes, trace to little glauconite in beds, trace bioturbation in filled with clay and silt with iron staining at rim, low to moderate energy nearshore environment.				2.0 ppm						50% Fair
(125.7-125.8') VOCs BF			126.0	124.6 - 129.4' SANDSTONE: Light grey (10 YR 7/2). Sand: 90%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 10%, sandstone is moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, moderate weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fracture faces in strata that display a greater degree of fracturing,										

Sample										Soil Properties					
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
(126.7-126.8') VOCs AF			127.0	moderately well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand as well as iron precipitate.										
(127.5-127.6') VOCs f5			128.0												
(128.4-128.5') VOCs AF			129.0												
	5.0'			129.6 - 134.6' SANDSTONE: Very pale brown (10 YR 8/3). Sand: 90%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 10%, sandstone is				3.8 ppm							11.7% Very Poor
(130-130.1') VOCs BF			130.0	moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, moderate weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fracture faces in strata that display a greater degree of fracturing, moderately well cemented with quartz and clay, trace bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate,										
(130.8-130.9')				sandstone displays bands of oxidized iron staining that follow bedding planes,											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
VOCs BF			131.0	little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal to shallow and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate.										
(131.9-132') VOCs BET			132.0											
(132.7-132.8') VOCs BF			133.0											
(133.3-133.4') VOCs AF			134.0											
	4.9'			134.6 - 139.5' SANDSTONE: Very pale brown (10 YR 8/3). Sand: 95%, very fine to medium grained, predominately medium grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering on outside of core, severe weathering on the fracture faces, beds are horizontally laminated to very thinly bedded and also				4.2 ppm						18.3% Very Poor
(135.2-135.3')			135.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
VOCs BF				display shallow angle cross bedding, highly jointed, semi-friable near fracture faces in strata that display a greater degree of fracturing, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures are filled with clay and iron precipitate, open fractures occur at bedding planes and are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate, increasing iron concentration with depth.										
			136.0											
(136.4-136.5') VOCs BET														
			137.0											
(137.8-137.9') VOCs BF														
			138.0											
			139.0											
	5.1'			139.6 - 142.4' SANDSTONE: Very pale brown (10 YR				5.3 ppm						44% Poor

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
(139.9-140') VOCs BF			140.0	8/3) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly jointed, very well cemented with quartz and iron precipitate, little pores and pits throughout, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, trace medium grained oxidized iron nodules throughout that fill pores and pits, healed horizontal hairline fractures are filled with clay and iron precipitate, open fractures occur at bedding planes and are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate, increasing iron concentration with depth.										
			141.0											
(141.3-141.4') VOCs BF														
(141.8-142.3) PHYS PROP			142.0											
(142.3-142.4') VOCs BET				Physical Properties Sample						10.3%				
				142.9 - 144.6' SANDSTONE: Very pale brown (10 YR 8/3) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly jointed, very well cemented with quartz and iron precipitate, little pores and pits throughout, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, trace medium grained oxidized iron nodules throughout that fill pores and pits, healed horizontal hairline fractures are filled with clay and iron precipitate, open fractures often occur at bedding										
(143-143.1') VOCs BF			143.0											
			144.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
				planes where there are shale partings or healed iron filled hairline fractures, fractures are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate, increasing iron concentration with depth.										
(144.8-144.9') VOCs BF	4.0'		145.0	144.6 - 148.6' SANDSTONE: Very pale brown (10 YR 8/3) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard to soft with increasing depth, fine grained, slight to moderate weathering as depth increases, friability increases with depth, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely jointed, moderately well to poor cementation with quartz and iron precipitate, trace pores and pits throughout, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, trace medium grained oxidized iron nodules throughout that fill pores and pits, healed horizontal hairline fractures are filled with clay and iron precipitate, fractures are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.				2.8 ppm							6.7% Very Poor
(146.1-146.2') VOCs BET			146.0											
(147.1-147.2') VOCs AF			147.0											
			148.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			149.0	149.6 – 150.4' SANDSTONE: Very pale brown (10 YR 8/3) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering, friable, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely jointed, moderately well to poor cementation with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, trace medium grained oxidized iron nodules throughout that fill pores and pits, fractures are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
(149.6-149.7') VOCs BET	4.6'		150.0					4.9 ppm						28.3% Poor
(151-151.1') VOCs BF			151.0	150.4 - 150.8' SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated, highly jointed, friable near fractures, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace iron oxidation on fracture faces, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.										
(152-152.1') VOCs BF			152.0	150.8 - 152.4' SANDSTONE: Very pale brown (10 YR 8/3) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering, friable near beds of shale, beds are horizontally laminated to very thinly bedded, intensely jointed, moderately well to poor cementation with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, fractures are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments

153.0

mineralization of iron precipitate.

152.4 - 152.8'
SANDSTONE: Light grey (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated, highly jointed, friable near fractures, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace iron oxidation on fracture faces, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.

(153.4-153.5') VOCs BF

154.0

152.8 - 154.2'
SANDSTONE: Very pale brown (10 YR 8/3) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering, friable near beds of shale, beds are horizontally laminated to very thinly bedded, intensely jointed, moderately well to poor cementation with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, fractures are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.

3.7'

(154.7-154.8') VOCs BF

3.3 ppm

8.3% Very Poor

155.0

154.6 - 156.5'
SANDSTONE: Brownish yellow (10 YR 6/6) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering, friable near beds of shale, beds are horizontally laminated to very thinly bedded, intensely jointed, moderately well to poor cementation with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, fractures are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.

156.0

(156.1-156.2') VOCs BF

157.0

156.5 - 158.3'
SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained,

(157.2-157.3')

Sample										Soil Properties					
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments

VOCs AF

predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, fine grained, moderate weathering, friable in strata that display greater percentages of fractures, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely jointed, moderately well to poorly cemented with iron precipitate and iron, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.

158.0

159.6 -160.3'
SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, fine grained, moderate weathering, friable in strata that display greater percentages of fractures, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely jointed, moderately well to poorly cemented with iron precipitate and iron, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, sandstone displays bands of heavier oxidized iron staining that follow bedding planes, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.

159.0

4.1'

1.8 ppm

36.7% Poor

160.0

(160-160.1') VOCs BF

Physical Properties Sample

13.8%

(159.6-160) PHYS PROP

160.7 - 161.9'
SANDSTONE: Brownish yellow (10 YR 6/6) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, slight weathering, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, well cemented with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, little to some iron oxidation on fracture faces, trace medium grained oxidized iron nodules throughout that fill pores and pits, fractures are horizontal to shallow in attitude and are smooth

161.0

(161-161.1') VOCs BF

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
				displaying infilling of very fine sand as well as secondary mineralization of iron precipitate.										
(161.9-162') VOCs BF			162.0	161.9 - 164.1' SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering, semi-friable at fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, sandstone displays bands of heavier oxidized iron staining that follow bedding planes, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
			163.0											
			164.0											
(164.4-164.5') VOCs BF	4.7'			164.6 - 169.3' SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering, semi-friable at fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, little pores and pits throughout, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, sandstone displays bands of heavier oxidized iron staining that follow bedding planes, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary				2.9 ppm						43.3% Poor
(165.6-165.7') VOCs BF			165.0											
			166.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
				mineralization of iron precipitate.										
(166.6-166.7') VOCs BET			167.0											
(167.5-167.6') VOCs BF			168.0											
			169.0	169.6 - 170.6' SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering, semi-friable at fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, little pores and pits throughout, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, sandstone displays bands of heavier oxidized iron staining that follow bedding planes, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary										
	5.1'							4.0 ppm						65% Fiar
(169.9-170') VOCs AF			170.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
				mineralization of iron precipitate.										
(170.8-170.9') VOCs BF			171.0	170.6 - 173.3' SANDSTONE: Brownish yellow (10 YR 6/6) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, well cemented with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, little to some iron oxidation on fracture faces, healed hairline fractured fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are smooth displaying infilling of very fine sand as well as secondary mineralization of iron precipitate.										
(171.6-171.7') VOCs f6			172.0											
(172.5-172.6') VOCs BF			173.0	173.3 - 174.2' SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering, semi-friable at fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, little pores and pits throughout, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, sandstone displays bands of heavier oxidized iron staining that follow bedding planes, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
(173.1-173.2') VOCs BF			174.0											
(174.4-174.5') VOCs BF				174.2 - 174.6' SANDSTONE: Brownish yellow (10 YR 6/6) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding,										
	4.5'							7.1 ppm						30% Poor

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			175.0	intensely to highly jointed, well cemented with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, little to some iron oxidation on fracture faces, healed hairline fractured fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are smooth displaying infilling of very fine sand as well as secondary mineralization of iron precipitate.										
(175.9-176') VOCs AF			176.0	174.6 - 176.9' SANDSTONE: Brownish yellow (10 YR 6/6) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, well cemented with quartz, sandstone displays bands of oxidized iron staining that follow bedding planes, little to some iron oxidation on fracture faces, fractures are horizontal to shallow in attitude and are smooth displaying infilling of very fine sand as well as secondary mineralization of iron precipitate.										
(176.7-176.8') VOCs BF			177.0	176.9 - 178.2' SANDSTONE: Red (2.5 YR 4/6) to Yellowish Brown (10 YR 5/8). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering, semi-friable at fracture faces, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, little pores and pits throughout, moderately well cemented with iron precipitate and quartz, sandstone is										
(177.2-177.3') VOCs BF			178.0	heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, sandstone displays bands of heavier oxidized iron staining that follow bedding planes, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
			179.0	178.2 - 179.1' SANDSTONE: Brownish yellow (10 YR 6/6) to white (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely to highly jointed, well cemented										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				with quartz, sandstone displays bands of oxidized iron staining that follow bedding planes, little to some iron oxidation on fracture faces, fractures are horizontal to shallow in attitude and are smooth displaying infilling of very fine sand as well as secondary mineralization of iron precipitate.										
	3.2'		180.0	180.0 - 183.0' SANDSTONE: Brownish yellow (10 YR 6/8) to yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is moderately sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, laminated to very thin horizontal and cross beds, sandstone displays bands of oxidized iron staining that alternate and vary in degree of iron concentration and follow bedding planes, pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				1.53 ppm						8.3% Very Poor
(180.7-180.8') VOCs BET			181.0											
(181.7-181.8') VOCs BET			182.0											
(182.5-182.6') VOCs BET			183.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			184.0											
(184.5-184.6') VOCs AF	4.2'			184.0 - 187.3' SANDSTONE: Brownish yellow (10 YR 6/8) to yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is moderately sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, laminated to very thin horizontal and cross beds, bedding planes become less apparent and abundant with depth, sandstone displays bands of oxidized iron staining that alternate and vary in degree of iron concentration and follow bedding planes, pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to moderately dipping in attitude, fractures are predominately horizontal to shallow, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				10.2 ppm							28.3% Poor
(185.6-185.7') VOCs AF			185.0											
(186.4-186.5') VOCs BF			186.0											
(187.1-187.2') VOCs BET			187.0											
(187.3-187.8) PHYS PROP				Physical Properties Sample 187.8 - 188.2' SANDSTONE: Yellow (2.5 Y 7/8). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly						13.0%				
			188.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
				bedded and trace laminated cross beds, bedding planes become less apparent and abundant with depth, sandstone displays trace bands of oxidized iron staining and follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately open, vertical healed hairline fractures are visible on fracture faces and are filled with iron oxidized clay, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
	4.8'		189.0	189.0 - 193.9' SANDSTONE: Yellow (2.5 Y 7/8). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly bedded and trace laminated cross beds, bedding planes become less apparent and abundant with depth, sandstone displays trace bands of oxidized iron staining that follow bedding planes, beds are heavily stained and cemented iron and limonite stained at 192.4', highly jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				7.2 ppm					63.6% Fair
(189.7-189.8') VOCs AF			190.0											
(190.4-190.5') VOCs BET			191.0											
(191.4-191.5') VOCs AF			192.0											
(192.4-192.5')														

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
VOCs BF														
			193.0											
(193.2-193.3') VOCs BF														
	4.5'		194.0	194.0 - 198.5' SANDSTONE: Yellow (2.5 Y 7/8). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly bedded and trace laminated cross beds, sandstone displays trace bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				9.68 ppm						50% Fair
(195-195.1') VOCs BF			195.0											
(195.8-195.9') VOCs BF			196.0											
(196.8-196.9')														

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
VOCs AF			197.0											
(197.4-197.5') VOCs BET														
			198.0											
	5.0'		199.0	199.0 - 201.3' SANDSTONE: Yellow (2.5 Y 7/8). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly bedded and trace laminated cross beds, sandstone displays trace bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				2.27 ppm						76.7% Good
(199.6-199.7') VOCs BF			200.0											
(200.6-200.7') VOCs BF			201.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
(202-202.1') VOCs f6			202.0	201.3 - 203.8' SANDSTONE: Pale yellow (2.5 Y 7/4). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are horizontal and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
(203.3-203.4') VOCs BET			203.0											
	5.0'		204.0	204.0 - 208.2' SANDSTONE: Pale yellow (2.5 Y 7/4). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are horizontal and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				21.6 ppm						50% Fair
(205.2-205.3') VOCs BF			205.0											

Sample											Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(206.1-206.2') VOCs BET			206.0											
(207.1-207.2') VOCs BF			207.0											
(207.8-207.9') VOCs BF			208.0											
(208.2-208.7) PHYS PROP				Physical Properties Sample						14.7%				
	0.0'		209.0	208.7 - 208.9' SANDSTONE: Pale yellow (2.5 Y 7/4). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are horizontal and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				NM						NA
			210.0	208.9 - 209.0' SANDSTONE: Pale yellow (2.5 Y 7/4). Sand: 70%, very fine to fine grained, predominately fine grained, subrounded										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
				to rounded, Clay and silt: 30%, sandstone is poorly sorted, poorly cemented with quartz and clay, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, alternating horizontally laminated beds of clay and sandy silt with fine grained subrounded white sand, intensely jointed, fractures occur at bedding planes and are horizontal in attitude, fractures are tight and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.											
			211.0	No Recovery.										
			212.0											
			213.0											
			214.0	214.0 - 217.7'										
(214.4-214.5')	3.9'			SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz				5.85 ppm						35% Poor

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
VOCs BF			215.0	cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, trace pores to pits throughout, trace pits are filled with iron nodules and have iron staining/precipitation rimming the pits, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, horizontal hairline healed fractures are filled with iron precipitate, fractures range from tight to open, predominately tight, fracture faces are horizontal and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
(215.7-215.8') VOCs AF			216.0											
(216.5-216.6') VOCs BET			217.0											
(217.2-217.3') VOCs BET			218.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
	3.9'		219.0	219.0 - 222.1' SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately open, fracture faces are horizontal to irregular and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				4.12 ppm						33.3% Poor
(219.6-219.7') VOCs BF			220.0											
(220.6-220.7') VOCs BF			221.0											
(221.6-221.7') VOCs AF			222.0	222.1 - EOB Elk Mound Group Eau Claire Formation Sandstone: very fine to fine grained, subround grains, moderately hard, moderately cemented, semi-friable, highly to intensely jointed, joints are horizontal to low angle (up to 25o), planar to cross bedding, laminated to very thin beds, clay in beds up to 0.5", trace bioturbation, trace pores to vugs with secondary mineralization and clay, low to moderate energy nearshore environment.										
(222.5-222.6') VOCs BF			223.0	222.1 - 222.8' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is very well sorted, moderately cemented with quartz cement, semi-friable and soft, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, some bioturbation										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
				where burrows are filled with a bluish-grey very fine grained silty sand and clay, highly to intensely jointed, predominately highly jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are horizontal to irregular and are smooth due to friability and display in filling of clay and very fine sand.										
	4.6'		224.0	224.0 - 225.1' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is very well sorted, moderately cemented with quartz cement, semi-friable and soft, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, some bioturbation where burrows are filled with a bluish-grey very fine grained silty sand and clay, highly to intensely jointed, predominately highly jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are horizontal to irregular and are smooth due to friability and display in filling of clay and very fine sand.				4.7 ppm						36.7% Poor
(224.6-224.7') VOCs BET			225.0							16.5%				
(225.1-225.6) PHYS PROP				Physical Properties Sample										
(225.9-226') VOCs BF			226.0	225.6 - 228.6' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is well sorted, moderately cemented with quartz cement, semi-friable and soft, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, little horizontal to shallow angle laminated partings of pale green shale that follow bedding planes, little bioturbation where burrows are filled with a bluish-grey very fine grained silty sand and clay, highly to intensely jointed, predominately highly jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular and are smooth due to friability and display in filling of clay and very fine sand as well as secondary mineralization of euhedral pyrite.										
(227-227.1') VOCs BF			227.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
			228.0											
(228.3-228.4') VOCs BET														
	3.0'		229.0	229.0 - 231.9' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is well sorted, moderately hard, moderately well cemented with clay and quartz cement, semi-friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, little horizontal to shallow angle laminated partings of pale green shale that follow bedding planes, little bioturbation where burrows are filled with a bluish-grey very fine grained silty sand and clay, highly to intensely jointed, predominately highly jointed, sandstone contains little pyrite mineralization throughout that are very fine grained in size, little pores to vugs throughout, pits and vugs are filled with very fine sand and clay as well as secondary mineralization of euhedral pyrite and chalcopyrite, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular and are smooth due to friability and display in filling of clay and very fine sand as well as pyrite.				3.58 ppm						30.6% Poor
(229.5-229.6') VOCs AF			230.0											
(230.6-230.7') VOCs BET			231.0											
(231.6-231.7') VOCs BF				232.0 - 233.8' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is well sorted, moderately hard, moderately well cemented with clay and quartz cement, semi-friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, little horizontal to shallow angle laminated partings of pale green shale that follow										
	1.8'		232.0					4.11						16.7%

Sample											Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
(232.3-232.4') VOCs BET				bedding planes, little bioturbation where burrows are filled with a bluish-grey very fine grained silty sand and clay, highly to intensely jointed, predominately highly jointed, sandstone contains little pyrite mineralization throughout that are very fine grained in size, little pores to vugs throughout, pits and vugs are filled with very fine sand and clay as well as secondary mineralization of euhedral pyrite and chalcopyrite, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular and are smooth due to friability and display in filling of clay and very fine sand as well as pyrite.				ppm						Very Poor
			233.0											
(233.2-233.3') VOCs BET				234.0' End of Boring. NOTE: BET - Between closely spaced fractures. AF - Above Fracture Surface. BF - Below fracture surface. BKN - Broken or crumbled section. NA - Not applicable.										
			234.0											

Dames & Moore

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
[illegible]	Madison Kipp	Madison, W

DRILLING METHOD: hollow Stem auger

SAMPLING METHOD: Split Spoon

BORING NO.: MW-2

SHEET: 1 of 3

WATER LEVEL	DRILLING START	DRILLING FINI
TIME	0900	130
DATE	6/5	6/
CASING DEPTH		

DATUM ELEVATION

SURFACE CONDITIONS: Asphalt

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF BLOWS	DEPTH IN FEET	SOIL GRAPH	
						0		
						1		
						2		
	24/19		1/4.5	7-13	15-18	3		2.5'-4.5' Silt, trace of Sand? Gravel, moist, brown to tan
						4		
						5		
	24/10		2/7.0	9-15	43-50/5	6		5'-7' Silt, trace of Sand? Gravel, moist, brown to tan
						7		
	24/23		3/9.5	13-18	23-16	8		7.5'-9.5' Silt, (Same as 5'-7')
						9		
						0		
	24/20		4/12	13-13	17-19	1		10'-12' Silt, Some Sand, trace gravel, moist, brown to tan
						2		
	24/23		5/14.5	7-12	15-17	3		12.5'-14.5' (Same as 5'-7')
						4		
						5		
	24/20		6/17	13-15	48-50/3	6		15'-17' (Same as 5'-7') moist
						7		
	24/21		7/19.5	13-19	22-35	8		17.5'-19.5' (Same as 5'-7') [illegible] of Sand stone
						9		
						0		

DRILLING CONTR. [illegible] ON209582

BY KLH DATE 6/5/92 CHK'D BY

MK000825

Dames & Moore

LOCATION OF BORING	JOB NO.	CLIENT	LOCATION
		Madison ...	Madison ...

DRILLING METHOD: hollow stem auger

SAMPLING METHOD:

BORING NO. MW-4

SHEET 2 OF 3

DRILLING	START	FINISH
TIME	0900	13
DATE	6/5	6/

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS:
						20		
	24/11		8/22	13-35-36-32		21		Silt, some sand, trace gravel, m... brown.
						22		
						23		
						24		
						25		
	24/10		9/27	18-28-50/3		26		Same as 20'-22'
						27		
						28		
						29		
						30		
	24/10		10/32	44-50/5		31		Same as 20'-22'
						32		
						33		
						34		
						35		
	24/24		11/37	23-33-48-50/5		36		w/... Sandstone, Silt Sand, very moist, green & brown
						37		
						38		
						39		
						40		

DRILLING CONTR.

№ 209582

BY ____ DATE ____ CHK'D BY ____

MK000826

Dames & Moore

LOCATION OF BORING	JOB NO.	CLIENT	LOCATION
		Madison Kco	Madison

DRILLING METHOD: hollow stem auger

SAMPLING METHOD: split Spoon

BORING NO. MW-4

SHEET 3 OF 3

DRILLING	START	FINI
TIME	0900	13
DATE	6/5	6/

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS:
	3 / 3		12 / 40.5			40		Wethered Sandstone, moist, greenish br
						41		
						42		41'-51' → Sandstone
						43		
						44		
						45		
						46		
						47		
						48		
						49		
						50		
						51		← Bottom of boring 51'
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

DRILLING CONTR. ______

No209582

BY KLH DATE 6/5/ CHK'D BY ______

Dames & Moore

LOCATION OF BORING	JOB NO.	CLIENT	LOCATION
		Madis...	Madison ...

DRILLING METHOD: hollow Stem auger

SAMPLING METHOD: Split Spoon

BORING NO. MW-4

SHEET 1 OF

DRILLING	START	FIN...
TIME	1330	17..
DATE	6/5	6/..

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS: Asphalt
						0		
						5 1		
	24/8		1/11	19-46-43-50/5		10 2		Sample taken from 9-11 ft Silt some sand, Moist Very dense brown
						15 3		
						20 4		
						25 5		0.6 - 35' Silt some sand, trace gravel moist, Very dense, brown
						30 6		
						35 7		35'-40' Weathered Sandstone
						40 8		
						45 9		40'-70' Sandstone
						50		
						55		
						60 2		
						65 3		
						70 4		EOB 71'
						5		
						6		
						7		
						8		
						9		
						0		

№209582

DRILLING CONTR.

BY h.l.H. DATE 6/15/92 CHK'D BY

MK000822

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp	— — — — — — — —	MW-4D2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Dave Cruise	07 / 27 / 99 (MM / DD / YY)	07 / 28 / 99 (MM / DD / YY)	6 1/4" ID HSA/ Air Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —	MW-4D2	_____ Feet MSL	_____ Feet MSL	10.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
SW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E
Lat — — —
Long — — —

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	1 3	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/Comments
			1	FILL, GRAVEL, little sand, little silt, dry, brown.	GM									
			2											
			3	CLAY, some silt, trace sand, low plasticity, dry, brown.	CL									
			4											
			5											
			6											
			7											
			8	SAND, some silt, fine-grained sand, dry, light brown.	SM									
			9											
			10											
			11											
			12											
			13											
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Robert J. Tauta | Firm Dames & Moore, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $4,000 for each violation. Fines not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-4D2

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			15	SAND, some silt, fine-grained sand, dry, light brown.	SM									
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23	BEDROCK, SANDSTONE.										
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-4D2

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			36	BEDROCK, SANDSTONE.										
			37											
			38											
			39											
			40											
			41											
			42											
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											
			53											
			54											
			55											
			56											
			57											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-

Sample Number	Sample Length Recovered (ft)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			58	BEDROCK, SANDSTONE.										
			59											
			60											
			61											
			62											
			63											
			64											
			65											
			66											
			67											
			68											
			69											
			70											
			71											
			72											
			73											
			74											
			75											
			76											
			77											
			78											
			79											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-4D2

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			80	BEDROCK, SANDSTONE.										
			81											
			82											
			83											
			84											
			85											
			86											
			87											
			88											
			89											
			90											
			91											
			92											
			93											
			94											
			95											
			96											
			97											
			98	EOB @ 98 ft.										
			99	Well set @ 96.5 ft.										
			100											
			101											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other ______________

Facility / Project Name	License/Permit/Monitoring Number	Boring Number	
Madison Kipp	— — — — — — —	MW-5S	
Boring Drilled By (Firm name and name of crew chief)	**Date Drilling Started**	**Date Drilling Completed**	**Drilling Method**
Badger State Drilling--Kevin McCumber	04 / 04 / 01 (MM DD YY)	04 / 04 / 01 (MM DD YY)	8 1/4" ID HSA/ Air Rotary
[redacted] **Common Well Name** MW-5S	**Final Static Water Level** ______ Feet MSL	**Surface Elevation** ______ Feet MSL	**Borehole Diameter** 10.3 Inches
Boring Location State Plane ______ N. ______ E S/C/N; SW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E	Lat — — —; Long — — —	**Local Grid Location (If Applicable)** ______ Feet ☐ N ☐ S ______ Feet ☐ E ☐ W	
County Dane	**DNR County Code** 1 3	**Civil Town / City / or Village** City of Madison	

Sample Number	Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/Comments
			0–3	FILL, GRAVEL, sandy, brown	GM									
1	14	5,5 11,10	3	CLAY, silty, stiff, moist, medium plasticity, light reddish brown	CL									
2	3	26,16 18,22	8	-coarse sandstone gravel piece encountered, light brown to tan										
3	12	13,19 20,26	13	SAND, silty, trace clay, fine to medium grained, dense, moist, medium graded, very light reddish brown	SM SP									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm URS Corporation, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $4,000 for each violation. Fines not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-5S

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/Comments
			15	SAND, silty, trace clay, fine to medium grained, dense, moist, medium graded, very light reddish brown										
			16											
			17											
4	18	16,19 19,33	18	-fine grained, trace gravel, trace clay, dense, moist, medium graded, very light reddish brown	SM SP									
			19											
			20											
			21											
			22											
5	1	50/3	23	-as above, very dense, pulverized light tan to white fine grained sand in shoe										
			24											
			25											
			26											
			27											
			28		SM SP									
6	8	50/1 50/3	29	-silty, trace sand and gravel, fine grained, very dense, moist, medium graded, light reddish brown										
			30											
			31											
			32											
			33											
7	6	50/1 50/4	34	SANDSTONE, light brown	BR									
			35											
			36											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-5S

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/Comments
8	6	100/6	36											
			37											
			38	SANDSTONE, light brown										
			39											
			40		BR									
			41											
			42											
			43											
			44	EOB @ 44.0 ft. well set @ 44.0 ft.										
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											
			53											
			54											
			55											
			56											
			57											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp		MW-5D

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Kevin McCumber	04 / 03 / 01 (MM / DD / YY)	04 / 03 / 01 (MM / DD / YY)	6 1/4" ID HSA

WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	MW-3D2	____ Feet MSL	____ Feet MSL	10 inches

Boring Location
State Plane ____ N. ____ E S/C/N
NW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E
Lat — — —
Long — — —

Local Grid Location (If Applicable)
____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	1 3	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/Comments
			1	Blind drilled, no samples collected										
			2	See log for MW-5S for soil descriptions										
			3	Bedrock @ 33 ft.										
			4	Auger refusal @ 39.5 ft., continue drilling using air rotary										
			5	EOB @ 82.0 ft.										
			6	Well set @ 80.0 ft.										
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm URS Corporation, Madison, WI

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MK000502

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp	— — — — — — — —	MW-5D2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Kevin McCumber	02 / 06 / 03 (MM DD YY)	02 / 10 / 03 (MM DD YY)	6.5" ID HSA/ Air Rotary

DNR Facility Well No.	Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-5D2	_____ Feet MSL	_____ Feet MSL	10.5 inches

Boring Location
State Plane _____ N. _____ E S/C/N
SW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E

Lat — — —
Long — — —

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	13	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/Comments
			1	Asphalt Parking Lot										
			2	Blind Drill to 170.8 feet BGS Well screened from 165.8 to 170.8 feet BGS										
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm URS Corporation, Madison, WI

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp Corporation		**MW-5D3**

Boring Drilled By:	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: **Todd** Last Name: **Schmelfeldt** Firm: **Boart Longyear**			**Mud Rotary**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-5D3	**841.81** Feet MSL	**872.34** Feet MSL	**8" to 32' & 6" to 237'**

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane **399919.9** N **2144191.75** E Lat
NW1/4 SW1/4 of Section **5**, T **7** N, R **10** Long

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	**Dane**	**13**	**Madison**

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
	1.2'	2 2 3 3	0.0	0.0 - 0.5' SILT: Black (10YR 2/1), little medium to coarse sand, some slag, metal fragments, loose, moist, slight odor.	ML			3.4 ppm						
				0.5 - 1.0' SILT: Grades from Gray to Dark yellowish brown (10YR 4/6), trace very fine sand, moist, slight odor.	ML									
			1.0	1.0 - 1.2' CLAY: Dark yellowish brown (10YR 4/6), little silt, trace very fine sand, high plasticity, soft (H.P. = 0.5-1), moist, no odor.	CH									
	1.3'	1 2 2 2	2.0	2.0 - 3.3' CLAY: Dark yellowish brown (10YR 4/6), little silt, trace very fine sand, slag and wood pieces to 2.4', gray mottling, medium plasticity, soft (H.P. = 1.5), moist, no odor.	CH			2.71 ppm						
			3.0											
	1.6'	2 2	4.0	4.0 - 5.0' CLAY: Dark yellowish brown (10YR 4/6),	CH			2.27 ppm						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Bryan Rudd Ernst

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI 53202 (414) 276-7742

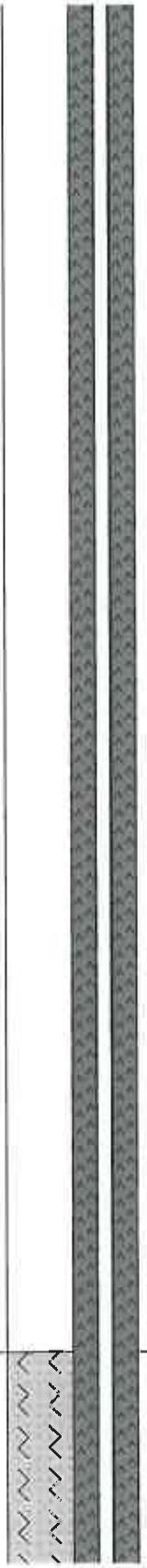
This form is authorized by Chapters 281, 283, 289, 291, 293, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
		2 3		little silt, trace very fine sand, gray mottling, medium plasticity, soft (H.P. = 1.5), moist, no odor.										
			5.0	5.0 - 5.1' SAND: Reddish brown (5YR 4/4), medium grained, little silt, well sorted, loose, wet, no odor.	SW									
				5.1 - 5.6' CLAY: Dark yellowish brown (10YR 4/6), some fine to medium grained sand, trace gravel up to 0.25", little silt, soft (H.P. = 0), high plasticity, sticky, wet, no odor.	CH								
	1.3'	4 9 12 10	6.0	6.0 - 7.3' SAND: Dark yellowish brown (10YR 4/6), very fine to coarse grained, little angular gravel up to 0.5", predominately 0.25", little silt, poorly sorted, loose, moist, no odor.	SW			2.35 ppm						
			7.0											
	1.6'	7 9 10 9	8.0	8.0 - 9.6' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine, some silt, trace angular gravel up to 0.25", loose, moist, no odor.	SW			2.09 ppm						
			9.0											
	0.0'	12 22 21 26	10.0	10.0 - 12.0' No Recovery.				NA						
			11.0											
	1.2'	4 7 19 15	12.0	12.0 - 13.2' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine grained, some silt, trace angular gravel and sandstone pieces up to 1.5", mostly 0.25 - 0.5", loose, moist, no odor.	SW			1.42 ppm						

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			13.0											
	1.4'	7 9 12 14	14.0	14.0 - 15.4' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine grained, trace angular gravel and sandstone pieces up to 1.5", mostly 0.13 - 0.5", loose, moist, no odor.	SW			3.47 ppm						
	1.4'	5 9 15 17	15.0 16.0	16.0 - 17.4' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine grained, little silt, trace angular gravel and sandstone pieces up to 1.5", mostly 0.25 – 0.5", poorly sorted, loose, wet, no odor.	SW			2.37 ppm						
	1.2'	12 17 30 19	17.0 18.0	18.0 - 19.2' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine grained, little silt, trace clay, trace angular gravel up to 1", mostly 0.13", cohesive, poorly sorted, wet, no odor.	SW			2.01 ppm						
	1.1'	12 15 17 18	19.0 20.0	20.0 - 21.1' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine grained, little silt, trace clay, trace angular gravel up to 1.5", mostly 0.25 – 0.5", cohesive, poorly sorted, wet, no odor.	SW			2.41 ppm						
			21.0											

Sample			Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts								Moisture Content	Liquid Limit	Plasticity Index	P 200	
	1.0'	6 15 20 32	22.0	22.0 - 22.5' SAND: Dark yellowish brown (10YR 4/6), very fine to medium grained, mostly fine grained, little silt, trace clay, trace angular gravel 0.25 - 0.5", cohesive, poorly sorted, wet, no odor.	SW			4.37 ppm						
				22.5 - 23.0' SAND: Dark yellowish brown (10YR 4/6), fine to medium grained, little silt, trace rounded gravel up to 1", loose, poorly sorted, wet, no odor.	SW									
			23.0											
			24.0											
	1.0'	25 22 50-0.2"		24.0 – 25.0' SAND: Dark yellowish brown (10YR 4/6), fine to medium grained, trace silt, some rounded to angular (fractured) gravel up to 1.5", loose, wet, no odor.	SW			3.61 ppm						
			25.0											
			26.0	26.0 - 38.0' BLIND DRILL: Refusal at 26'. Blind drilled to 29.0' where Boart reported competent bedrock. Continued blind drilling to 38'. 6" casing set at 32' bgs.										
			27.0											
			28.0											
			29.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
			30.0											
			31.0											
			32.0											
			33.0											
			34.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
			35.0											
			36.0											
			37.0											
	1.0'		38.0	38.0 - 98.2' Tunnel City Group Lone Rock Formation SANDSTONE: very fine to fine grained, moderately hard, moderately to well cemented, highly jointed, joints are horizontal to low angle, cross to irregular bedding, laminated to thin beds, rip-up				1.4 ppm						29.8% Poor

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
(38.6-38.7) VOCs BET				clasts, trace bioturbation, trace pores, secondary mineralization, trace iron nodules, moderate to high energy nearshore environment.										
	5.0'		39.0	38.0 – 38.9' SANDSTONE: Pink (7.5YR 7/3), Sand: 90%, very fine to fine grained, subangular to subround, Glauconite: 10%, sandstone is well sorted, moderately hard, moderately to well cemented, quartz cement, trace hairline fractures with secondary mineralization and sand infilling, iron staining on fracture faces, trace bioturbation, trace iron nodules, secondary mineralization throughout.				0.0 ppm		9.4%				47% Poor
(39.7-39.8) VOCs BF			40.0	38.9 – 39.0' SANDSTONE: Light brown (7.5YR 6/4), Sand: 90%, very fine grained, subangular to subround, Glauconite and Clay: 10%, sandstone is well sorted, hard, well cemented, irregular bedding, trace slightly weathered vertical hairline fracture with secondary mineralization and sand infilling, trace to little rip-up clasts containing parent material with iron staining.										
			41.0	39.0 - 39.8' SANDSTONE: Brown (7.5YR 5/4), Sand: 95%, very fine to fine grained, subangular to subround, Clay: 5%, sandstone is well sorted, moderately cemented, moderately hard, irregular bedding, little bioturbation where burrows are filled with clay and iron precipitate, trace pores throughout.										
(41.1-41.2) VOCs BF				39.8 - 40.2' SANDSTONE: Brown (7.5YR 5/4), Sand: 90%, very fine to medium grained, subangular to subround, Glauconite and clay: 10%, sandstone is moderately well sorted, moderately cemented, moderately hard, laminated cross to irregular bedding, green clay in thin partings, intensely jointed, iron staining on outside of core as well as on fracture surfaces, secondary mineralization of iron.										
(41.8-41.9) VOCs BET			42.0	40.2 - 41.2' SANDSTONE: Gray (10YR 6/1), Sand: 90%, very fine to medium grained, subangular to subround, Glauconite: 10%, sandstone is moderately well sorted, moderately hard, moderately cemented, iron staining on outside of core as well as on fracture surfaces, rip-up clasts containing parent material, intensely jointed, joints display iron staining, secondary mineralization, and very fine to fine sand infilling.										
				41.2 - 41.5' SANDSTONE: Gray (10YR 5/1), Sand: 90%, very fine to medium grained,										
			43.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			43.0	subangular to subround, Glauconite: 10%, sandstone is moderately well sorted, moderately hard, moderately cemented, laminated planar beds, clay in thin partings, intensely jointed, hairline vertical fracture, fractures display very fine to fine sand infilling, secondary mineralization.										
(43.4-43.5) VOCs BF				41.5 - 41.6' SANDSTONE: Pink (7.5YR 7/3), Sand 95%, very fine to fine grained, subangular to subround, Clay 5%, sandstone is very well sorted, hard, well cemented, no discernible beds, iron staining on outside of core in bands, sharp contact with above and below.										
	2.4'		44.0	41.6 - 42' SANDSTONE: Brown (7.5YR 5/4), Sand: 90%, very fine to medium grained, subangular to subround, Clay and Glauconite: 10%, sandstone is moderately sorted, moderately hard, moderately cemented, laminated cross beds, weathered vertical hairline fractures.				0.0 ppm						20% Poor
(44.2-44.3) VOCs BET				42 - 43.5' SANDSTONE: Brown (7.5YR 5/4), Sand: 90%, very fine to coarse sand, subangular to subround, Glauconite: 10%, sandstone is poorly sorted, well cemented, hard, trace pores to vugs, calcite precipitate and iron staining, iron staining on outside of core as well as on fracture surfaces, rip-up clasts throughout containing parent material.										
(45.3-45.4) VOCs BET			45.0											
(45.6-46.1) PHYS PROP				43.5 - 44' SANDSTONE: Brown (7.5YR 5/4), Sand: 95%, very fine to medium grained, subangular to subround, Clay: 5%, sandstone is moderately sorted, moderately cemented, moderately hard, trace iron nodules, rip-up clasts containing parent material, very thin cross to irregular beds.						8.2%				
			46.0	44.0 - 44.7' SANDSTONE: Pale brown (10YR 6/3), Sand: 90%, very fine to medium grained, subangular to subround, Clay and glauconite: 10%, sandstone is moderately sorted, poorly cemented, soft, laminated to very thin planar beds with thin clay partings, weathered horizontal fracture surfaces.										
(46.1-46.2) VOCs BF				44.7 - 45.4' SANDSTONE: Light brown (7.5YR 6/3), Sand: 95%, very fine to medium, mostly medium, subangular to subround, Glauconite: 5%, sandstone is moderately sorted, poorly cemented, soft, friable laminated cross to irregular beds, cross beds are shallow angle up to 20o, iron staining on outside of core as well as on fracture surfaces, glauconite presence increases with depth, beds become										
			47.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			48.0	horizontal at base, siltstone from 45.2-45.3'. 45.4 - 46.3' SANDSTONE: Reddish yellow (7.5YR 6/6), Sand: 80%, very fine to fine grained, subangular to subround, Clay: 20%, sandstone is moderately well sorted, moderately hard, moderately weathered, well cemented with clay and iron precipitate, iron staining on outside of core as well as on fracture surfaces, laminated planar to irregular beds, little pores to pits throughout, horizontal fractures filled with secondary iron precipitation and very fine sand and clay.											
	4.9'		49.0	49.0 - 50.4' SANDSTONE: Light gray (10YR 7/2), Sand: 85%, very fine to fine grained, subangular to subround, Clay: 15%, sandstone is well sorted, very soft, moderately weathered, poorly cemented, iron staining on outside of core as well as on fracture surfaces, laminated planar beds, beds are slightly undulating, little pits throughout, horizontal fractures filled with secondary iron precipitation and very fine sand and clay, trace to little burrows filled with clay and iron precipitate.				0.0 ppm							13.6% Very Poor
(49.8-49.9) VOCs BET			50.0											
(50.8-50.9) VOCs BF			51.0	50.4 - 51.3' SANDSTONE: Yellowish brown (10YR 7/2), Sand: 95%, very fine to fine grained, trace medium sand, subangular to subround, Glauconite: 5%, sandstone is moderately well sorted, moderately hard, moderately cemented, irregular bedding, rip-up clasts containing parent material with iron staining, weathered hairline fractures throughout, trace pores.											
(51.1-51.2) VOCs f3				51.3 - 51.5' SANDSTONE: Strong brown (7.5YR 5/6), Sand: 95%, very fine to fine grained, mostly fine, subangular to subround, Glauconite: 5%, sandstone is well sorted, moderately hard, well cemented, quartz matrix, iron staining on core as well as on fracture surfaces, no discernible bedding, little pores to pits, trace vugs with calcite and iron precipitation, trace rip-up clasts											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
				containing parent material.										
			52.0	51.5 - 52.2' SANDSTONE: Strong brown (7.5YR 5/6), Sand: 95%, very fine to medium grained, mostly fine, subangular to subround, Glauconite: 5%, sandstone is moderately sorted, moderately hard to hard, iron staining on core, irregular bedding, little pores to pits throughout, little to some rip-up clasts containing parent material with iron staining.										
(52.2-52.3) VOCs BF				52.2 - 52.9' SANDSTONE: Light brownish gray (10YR 6/2), Sand: 85%, very fine to fine grained, subangular to subround, Clay and glauconite: 15%, sandstone is moderately sorted, moderately hard, moderately cemented, paper to laminated planar beds of alternating sandstone and clay in partings, gradational transition into below.										
(52.9-53) VOCs AF			53.0	52.9 - 53.2' SANDSTONE: Pink (7.5YR 7/3), Sand: 95%, very fine to fine grained, mostly fine, subangular to subround, Glauconite: 5%, sandstone is well sorted, moderately hard, well cemented, quartz matrix, iron staining on core as well as on fracture surfaces, no discernible bedding, trace pores to pits with calcite and iron precipitation, trace rip-up clasts containing parent material, trace iron healed hairline fractures.										
	3.9'		54.0	53.2 - 53.9' SANDSTONE: Light brown (7.5YR 6/4), Sand: 90%, very fine to medium grained, subangular to subround, Clay and glauconite: 5%, sandstone is moderately sorted, soft to moderately hard, moderately cemented, laminated to very thin planar to cross beds, iron staining on core as well as on fracture faces.				0.0 ppm						36.5% Poor
(54.7-54.8) VOCs BF			55.0	54.0 – 54.2' SANDSTONE: Light brown (7.5YR 6/4), Sand: 90%, very fine to medium grained, subangular to subround, Clay and glauconite: 5%, sandstone is moderately sorted, soft to moderately hard, moderately cemented, laminated to very thin planar to cross beds, iron staining on core as well as on fracture faces.										
			56.0	54.2 – 55.8' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subround, Clay and iron precipitate: 20%, sandstone is moderately sorted, moderately hard to hard, fine grained, moderate weathering on outside of core as well as on horizontal open fractures, laminated to thin bedding, well cemented with quartz and iron precipitate, iron staining on outside of core as well as on fracture surfaces, little pores to pits throughout,										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(56.2-56.3) VOCs f2				pits contain secondary mineralization of calcite grains and iron precipitate, secondary mineralization of iron precipitate in healed horizontal fractures, intensely to highly jointed, open horizontal fractures are rough and irregular displaying in filling of very fine white sand and iron precipitate.										
(57-57.1) VOCs BET			57.0	55.8 – 58.9' SANDSTONE: Light brown (7.5YR 6/4), Sand: 90%, very fine to medium grained, subangular to subround, Clay and glauconite: 5%, sandstone is moderately sorted, soft to moderately hard, moderately cemented, laminated to very thin planar to cross beds, iron staining on core as well as on fracture faces.										
			58.0											
	3.8'		59.0	59.0 – 59.9' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, very fine to fine grained, subangular to subrounded, Glauconite and Iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, very slight weathering displayed on outside of core as well as on horizontal fractures, horizontal very thin beds as well as laminated shallow angled cross beds, little fine grained glauconite, trace pits and pores throughout, bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and iron precipitate, intensely jointed, well cemented, horizontal fractures are smooth and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.				0.0 ppm					18.3% Very Poor
(59.7-59.8) VOCs BET			60.0	59.9 – 61.8' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			61.0	quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to pits throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation, secondary mineralization of iron precipitate in healed horizontal fractures, intensely to highly jointed, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine white sand and iron precipitate.						9.9%				
(61.1-61.2) VOCs BF			62.0	61.8 – 63.1' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, very fine to fine grained, subangular to subrounded, Glauconite and Iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, very slight weathering displayed on outside of core as well as on horizontal fractures, horizontal very thin beds as well as laminated shallow angled cross beds, little fine grained glauconite, trace pits and pores throughout, bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and iron precipitate, highly jointed, well cemented, horizontal fractures are smooth and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
(62.1-62.2) VOCs BF			63.0	63.1 – 63.7' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to pits throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation, highly jointed, secondary mineralization of iron precipitate in healed horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine white sand and iron precipitate.										
	3.9'		64.0					0.0 ppm						25% Poor
(64.25-64.5) VOCs f3														
(64.5-65) PHYS PROP										8.5%				
				64.0 – 64.3' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, very fine to fine grained, subangular to subrounded, Glauconite and Iron precipitate: 5%, sandstone is very well sorted, moderately										
			65.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			65.0	hard, fine grained, very slight weathering displayed on outside of core as well as on horizontal fractures, horizontal very thin beds as well as laminated shallow angled cross beds, little fine grained glauconite, trace pits and pores throughout, bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and iron precipitate, highly jointed, well cemented, horizontal fractures are smooth and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
(65.3-65.4) VOCs BF			66.0	64.3 – 65.7' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to pits throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation, highly jointed, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine white sand and iron precipitate.										
(66.4-66.5) VOCs BET			67.0	65.7 – 66.6' SANDSTONE: Very pale brown (10 YR 8/4) to brownish yellow (10 YR 6/8). Sand: 95%, very fine to fine grained, subangular to subrounded, Glauconite and Iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, horizontal very thin beds as well as laminated shallow angled cross beds, little fine grained glauconite, bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and iron precipitate, bands of heavier oxidized iron staining throughout, highly jointed, well cemented, horizontal fractures are irregular and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
(67-67.1) VOCs BF			68.0	66.6 – 67.4' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures,										
	2.4'		69.0					0.0 ppm						0% Very Poor

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
(69.9-70) VOCs BET			70.0	medium bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to pits throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation, highly jointed, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(70.8-70.9) VOCs BET			71.0	69.0 – 69.7' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, horizontal thin bedding as well as laminated cross beds, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to vugs throughout, vugs and pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation, highly jointed, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
			72.0	69.7 – 71.2' SANDSTONE: Very pale brown (10 YR 8/4) to brownish yellow (10 YR 6/8). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, horizontal very thin beds as well as laminated shallow angled cross beds, little pits to vugs, pores and vugs contain secondary mineralization of calcite and iron precipitate, bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and iron precipitate, bands of heavier oxidized iron staining throughout, highly jointed, well cemented, horizontal healed hairline fractures are filled with iron precipitate, horizontal fractures are irregular and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
			73.0	74.0 – 74.8' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
				moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, horizontal thin bedding as well as laminated cross beds, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pores to vugs throughout, vugs and pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, moderately jointed, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
	5.0'		74.0					0.0 ppm						35% Poor
(74.5-74.6) VOCs BF			75.0	74.8 – 75.5' SANDSTONE: Very pale brown (10 YR 8/4) to brownish yellow (10 YR 6/8). Sand: 80%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 20%, sandstone is moderately sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal fractures, no discernible bedding visible due to severe bioturbation and iron precipitation, little pits to vugs, pores and vugs contain secondary mineralization of calcite and iron precipitate, severe bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and rimmed by iron precipitate, bands of heavier oxidized iron staining throughout, highly jointed, well cemented, horizontal healed hairline fractures are filled with iron precipitate, horizontal fractures are irregular and display in filling of clay and very fine sand as well as secondary mineralization of iron precipitate.										
(75.7-75.8) VOCs BET			76.0											
(76.6-76.7) VOCs BET			77.0	75.5 – 76.7' SANDSTONE: Very pale brown (10 YR 8/4) to brownish yellow (10 YR 6/8). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, sandstone is very well sorted, moderately hard, fine grained, slight weathering displayed on outside of core as well as on horizontal fractures, horizontal very thin beds as well as laminated shallow angled cross beds, laminated beds of clay, little pits, bioturbation visible on open horizontal fracture faces and on outside of core, burrows are filled with clay and iron precipitate, highly jointed, well cemented, horizontal healed hairline fractures are filled with iron precipitate and clay, horizontal fractures are irregular and display in filling of clay and very fine sand as well as secondary mineralization of										
(77.8-77.9) VOCs BF			78.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
				iron precipitate.										
(78.5-78.6) VOCs f3				76.7 – 79.0' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, horizontal thin bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little fine grained glauconite, little pores to vugs throughout, vugs and pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, highly jointed, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(79.7-79.8) VOCs BET	4.4'		79.0					0.0 ppm						13.3% Poor
(80.5-80.6) VOCs BET			80.0	79.0 – 80.4' SANDSTONE: Very pale brown (10 YR 7/3). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering on outside of core as well as on horizontal open fractures, laminated bedding, well cemented with quartz and clay, laminated clay beds, bioturbation have burrows that are filled with clay and rimmed with iron precipitate, iron precipitation on outside of core as well as on fracture faces, little pores to pits throughout, intensely jointed, secondary mineralization of iron precipitate on horizontal fractures, healed horizontal hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
			81.0											
(81.9-82) VOCs BET			82.0	80.4 – 80.7' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 80%, fine grained, subangular to subrounded, Clay and iron precipitate: 20%, sandstone is moderately well sorted, moderately hard to hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, horizontal thin bedding, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little fine grained glauconite, little pores to vugs throughout, vugs and pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation where burrows are filled with										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(82.7-82.8) VOCs AF			83.0	clay and rimmed by iron precipitate, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate. 80.7 – 81.8' SANDSTONE: Very pale brown (10 YR 7/3). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering on outside of core as well as on horizontal open fractures, very thin to thinly bedded, well cemented with quartz and clay, rip up clasts of clay and iron precipitation throughout, bioturbation have burrows that are filled with clay and rimmed with iron precipitate, iron precipitation on outside of core as well as on fracture faces, little pores to pits throughout, intensely jointed, secondary mineralization of iron precipitate and euhedral calcite on horizontal fractures, healed horizontal hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.						13.0%				
	4.2'		84.0					0.0 ppm						21.7% Poor
(84.6-84.7) VOCs BF			85.0	81.8 – 83.2' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 90%, fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, horizontal thin bedding to laminated cross beds, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little fine grained glauconite throughout, little pores to vugs throughout, vugs and pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.						14.4%				
(85-85.6) PHYS PROP														
(85.8-85.9) VOCs BET			86.0											
(86.9-				84.0 – 84.6' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 90%, fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
87) VOCs BET			87.0	on horizontal open fractures, horizontal thin bedding to laminated cross beds, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pits to pores throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(87.8-87.9) VOCs BF			88.0	84.6 – 85.0' SANDSTONE: Very pale brown (10 YR 8/3) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, moderately hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly jointed, laminated bedding to no discernible bedding due to bioturbation, horizontal hairline fractures, healed horizontal hairline fractures are filled with iron precipitate, trace laminated clay beds, severe bioturbation where burrows are filled with clay and rimmed with iron precipitate, trace pits to vugs, pores and vugs have secondary mineralization of iron precipitate and calcite, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
	4.4'		89.0	85.0 – 85.6' PHYSICAL PROPERTIES SAMPLE				0.0 ppm						11.7% Very Poor
(89.3-89.4) VOCs BET				85.6 – 87.8' SANDSTONE: Yellowish brown (10 YR 5/4). Sand: 90%, fine grained, subangular to subrounded, Clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard, fine grained, moderate weathering displayed on outside of core as well as on horizontal open fractures, horizontal thin bedding to laminated cross beds, well cemented with quartz and iron precipitate, iron precipitation on outside of core as well as on fracture surfaces, little pits to pores throughout, pits contain secondary mineralization of euhedral calcite grains and iron precipitate, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, secondary mineralization of iron precipitate on horizontal fractures, horizontal healed hairline fractures are filled with iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(90.3-90.4) VOCs BF			90.0											
			91.0	87.8 – 88.2'										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(91.9-92) VOCs BET			92.0	SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, fine grained, subangular to subrounded, Clay and iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, very slight weathering displayed on outside of core as well as on horizontal open fractures, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, secondary mineralization of iron precipitate on horizontal fractures, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(92.9-93) VOCs f3			93.0	89.0 – 89.3' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, fine grained, subangular to subrounded, Clay and iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, very slight weathering displayed on outside of core as well as on horizontal open fractures, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, trace glauconite lenses, secondary mineralization of iron precipitate on horizontal fractures, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
	4.5'		94.0	89.3 – 92.2' SANDSTONE: Very pale brown (10 YR 8/2) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, moderately hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly jointed, laminated bedding to no discernible bedding due to bioturbation, horizontal hairline fractures, healed horizontal hairline fractures are filled with iron precipitate, trace laminated clay beds, severe bioturbation where burrows are filled with clay and rimmed with iron precipitate, trace pits to vugs, pores and vugs have secondary mineralization of iron precipitate and calcite, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.				0.0 ppm					16.9% Very Poor
(94.5-94.6) VOCs BET			95.0	92.2 – 92.4' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 90%, fine grained, subangular to subrounded, Glauconite and iron precipitate: 10%, sandstone is well sorted, moderately hard, fine grained, very slight weathering displayed on outside of core as well as on horizontal open fractures, trace bioturbation where burrows are filled with clay and rimmed by iron precipitate, some fine grained glauconite throughout, rip up clasts of cemented parent sandstone is cemented in the glauconitic sandstone, secondary mineralization of										
(95.5-95.6) VOCs BET														

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
			96.0	iron precipitate on horizontal fractures, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(96.8-96.9) VOCs BF			97.0	92.4 – 93.5' SANDSTONE: Very pale brown (10 YR 8/2) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, moderately hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly jointed, laminated bedding to no discernible bedding due to bioturbation, horizontal hairline fractures, healed horizontal hairline fractures are filled with iron precipitate, trace laminated clay beds, severe bioturbation where burrows are filled with clay and rimmed with iron precipitate, trace pits to vugs, pores and vugs have secondary mineralization of iron precipitate and calcite, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(97.9-98) VOCs BF			98.0	94.0 – 94.6' SANDSTONE: Very pale brown (10 YR 8/2) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, moderately hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly jointed, laminated bedding to no discernible bedding due to bioturbation, horizontal hairline fractures, healed horizontal hairline fractures are filled with iron precipitate, trace laminated clay beds, severe bioturbation where burrows are filled with clay and rimmed with iron precipitate, trace pits to vugs, pores and vugs have secondary mineralization of iron precipitate and calcite, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
	5.0'		99.0	94.6 –95.6' GLAUCONITIC SANDSTONE: Pale olive (5Y 6/3). Sand 80%, very fine to fine grained, subangular to subrounded, Glauconite and clay: 20%, fine grained in size, sandstone is moderately well sorted, soft to moderately hard, fine grained, slight weathering of the core and fracture faces, thinly bedded to laminated cross beds, highly jointed, bioturbation with burrows filled by clay and rimmed with iron precipitate, some fine grained glauconite throughout as well as glauconite lenses and very thin glauconite beds, moderately well cemented, secondary mineralization of iron precipitate, open horizontal fracture faces are irregular and soft and display in filling of clay and very fine sand as well as iron precipitate.				0.0 ppm						23.3% Very Poor
(99.4-99.5) VOCs BF			100.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
(100.3-100.4) VOCs AF (100.6-100.7) VOCs f3			101.0	95.6 – 96.3' SANDSTONE: Very pale brown (10 YR 8/2 to 10 YR 7/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay: 10%, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering on outside of core and on fracture faces, intensely jointed, horizontal hairline fractures, healed hairline fractures are filled with clay and iron precipitate, laminated horizontal and cross beds, little bioturbation where burrows are filled with clay and very fine sand, bands of oxidized limonite staining, trace fine grained glauconite grains throughout, secondary mineralization of iron precipitate, open horizontal and shallow angle fracture faces are irregular and soft and display in filling of clay and very fine sand as well as iron precipitate, little filled burrows at fracture faces.										
(102.2-102.3) VOCs AF			102.0	96.3 – 97.5' SANDSTONE: Very pale brown (10 YR 8/2) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, moderately hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly jointed, laminated bedding to no discernible bedding due to bioturbation, horizontal hairline fractures, healed horizontal hairline fractures are filled with iron precipitate, trace laminated clay beds, severe bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, secondary mineralization of iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.						11.4%				
(102.8-102.9) VOCs BET			103.0	97.5 – 97.9' GLAUCONITIC SANDSTONE: Pale olive (5Y 6/3). Sand: 80%, very fine to fine grained, subangular to subrounded, Glauconite and clay: 20%, fine grained in size, sandstone is moderately well sorted, moderately hard, fine grained, slight weathering of the core and fracture faces, thinly bedded to laminated cross beds, rip up clasts contain parent fine grained sand without glauconite, highly jointed, bioturbation with burrows filled by clay and rimmed with iron precipitate, some fine grained glauconite throughout as well as glauconite lenses and very thin glauconite beds, moderately well cemented, secondary mineralization of iron precipitate, open horizontal fracture faces are irregular and soft and display in filling of clay and very fine sand as well as iron precipitate.										
	4.2'		104.0	97.9 – 98.2' SANDSTONE: Very pale brown (10 YR				0.0 ppm						15% Very Poor

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
(104.6-104.7) VOCs BET			105.0	7/3). Sand: 95%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on fracture faces, highly jointed, fractures are horizontal to shallow in attitude, thinly bedded, trace very fine glauconite throughout, trace pores to pits throughout, trace bioturbation where burrows are filled with clay and very fine sand and rimmed by iron precipitate, secondary mineralization of iron on the outside of the core, moderately well cemented, horizontal healed hairline fractures are filled with iron precipitate, open horizontal and shallow angle fractures are irregular and rough and display in filling of clay and very fine sand. NOTE: Wonewoc Ironton (Transition) member begins at ~98.2' bgs.										
			106.0	98.2 - 106.4' Elk Mound Group Wonewoc Formation: Ironton (Transition) member SANDSTONE: very fine to medium grained, subangular to subround grains, moderately hard to hard, moderately to well cemented, highly to intensely jointed, joints are horizontal to low angle (up to 30o), trace high angle fractures, planar to cross bedding, laminated beds, trace rip up clasts, trace pits to pores, trace to little iron staining, trace iron healed hairline fractures, low to moderate energy nearshore environment.										
(106.2-106.3) VOCs BET														
(106.7-106.8) VOCs BF			107.0											
(107.3-107.7) PHYS PROP				99.0 – 99.7' SANDSTONE: Light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, sandstone is well sorted, moderately hard, fine grained, slight weathering on outside of core as well as on fracture faces, highly jointed, fractures are horizontal to shallow in attitude with trace vertical hairline fractures visible at fracture faces, thinly bedded, trace very fine glauconite throughout, trace pores to pits throughout, little bioturbation where burrows are filled with clay and very fine sand and rimmed by iron precipitate, secondary mineralization of iron on the outside of the core, moderately well cemented, horizontal healed hairline fractures are filled with iron precipitate, open horizontal and shallow angle fractures are irregular and rough and display in filling of clay and very fine sand as well as iron precipitation.							7.8%				
(107.7-107.8) VOCs BET			108.0											
				99.7 – 103.2' SANDSTONE: Very pale brown (10 YR 8/3 to 7/3). Sand: 90-95%, fine grained, subangular to subrounded, Glauconite										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
	4.1'		109.0	and Iron precipitate: 5-10%, fine grained in size throughout, sandstone is very well sorted, soft to moderately hard, fine grained, slight weathering on outside of core as well as open fracture faces, laminated horizontal and cross beds, highly to intensely jointed with fractures occurring at bedding planes, trace pores throughout, moderately well cemented, secondary mineralization of iron precipitate on the fracture faces as well as the outside of the core, contains bands of laminated iron oxidized/stained beds, trace horizontal hairline fractures, healed hairline fractures are filled with iron precipitate and clay, open fractures are horizontal to shallow in attitude and have faces that are smooth to irregular and soft which display infilling of clay and very fine sand as well as iron precipitate.				1.7 ppm							15.8% Very Poor
(109.8-109.9) VOCs BET			110.0	104.0 – 104.3' SANDSTONE: Yellow (10 YR 7/6) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, moderately hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, intensely jointed, laminated bedding to no discernible bedding due to bioturbation, trace pores to pits throughout, horizontal hairline fractures, healed horizontal hairline fractures are filled with iron precipitate, trace laminated clay beds, bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, secondary mineralization of iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(111-111.1) VOCs BET			111.0											
(111.9-112) VOCs BET			112.0	104.3 – 104.6' SANDSTONE: Yellowish brown (10 YR 5/6) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to fine grained, subangular to subrounded, Clay and Iron precipitate: 10%, well sorted, hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly jointed, laminated bedding, laminated beds of intense iron cementation and precipitation, little pores to pits throughout, horizontal to moderately dipping hairline fractures, healed hairline fractures are filled with iron precipitate, secondary mineralization of iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
			113.0	104.6 – 106.4' SANDSTONE: Very pale yellow (10 YR 7/4). Sand: 95%, fine grained, subangular to subrounded, Glauconite and Iron precipitate: 5%, fine grained in size throughout, sandstone is very well sorted, soft to moderately hard, fine										

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
				grained, slight weathering on outside of core as well as open fracture faces, laminated horizontal and cross beds, highly jointed to intensely jointed and fractured from 105.8 – 106.4' with fractures occurring at bedding planes, little pits to pores throughout, trace bioturbation where burrows are filled with clay and rimmed with iron precipitate, moderately well cemented, secondary mineralization of iron precipitate on the fracture faces as well as the outside of the core, contains bands of laminated iron oxidized/stained beds, trace horizontal hairline fractures, healed hairline fractures are filled with iron precipitate and clay, open fractures are horizontal to shallow in attitude and have faces that are smooth to irregular and soft which display infilling of clay and very fine sand as well as iron precipitate and little glauconite. NOTE: Wonewoc Ironton member begins at ~106.4' bgs.									
	4.9'		114.0					0.0 ppm						65% Fair
(114.6-114.7) VOCs AF														
			115.0	106.4 - 130.3' Elk Mound Group Wonewoc Formation: Ironton Member SANDSTONE: fine to medium grained, subround grains, soft to moderately hard, poorly to well cemented, semi-friable, highly to intensely jointed, joints are horizontal, planar to cross bedding, laminated beds, trace iron staining, trace glauconite, moderate energy nearshore environment.										
(115.4-115.5) VOCs BF														
			116.0	106.4 – 107.3' SANDSTONE: Yellowish brown (10 YR 5/6) to light yellowish brown (10 YR 6/4). Sand: 90%, very fine to medium grained, predominately fine grained, subangular to subrounded, Glauconite and Iron precipitate: 10%, fine grained in size, sandstone is moderate to poorly sorted, well cemented with quartz and iron precipitate, hard, fine grained, slight weathering on the outside of core as well as on the fracture faces, highly to intensely jointed, thinly bedded, laminated beds of intense iron cementation and precipitation, little pores to pits throughout, horizontal to moderately dipping hairline fractures, trace vertical hairline fractures, healed hairline fractures are filled with iron precipitate, secondary mineralization of iron precipitate, open horizontal fractures are rough and irregular displaying in filling of very fine sand and clay as well as iron precipitate.										
(116.4-116.5) VOCs BF (116.7-116.8) VOCs f4														
			117.0	107.3 – 107.8' PHYSICAL PROPERTIES SAMPLE										
				107.8 – 108.1' SANDSTONE: Pale Red (2.5 YR 6/2) to Reddish brown (2.5 YR 5/3). Sand: 90-95%, fine to medium grained,										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(117.8-117.9) VOCs BF			118.0	subrounded to rounded, Glauconite and iron precipitate: 5-10%, fine grained in size, sandstone is moderately well sorted, very well cemented with quartz cement, hard, fine grained, fresh, highly jointed, laminated to thinly bedded, little pores through vugs throughout, pits and vugs filled with very fine glauconitic sand and clay, bands of pale red and purplish discoloration, healed horizontal hairline fractures are filled with glauconite and very fine sand, secondary mineralization of iron precipitate on open fracture faces, open horizontal fractures are smooth to rough and display infilling of very fine sand and clay as well as iron precipitate.										
	5.0'		119.0	108.1 – 108.3' SANDSTONE: Very pale brown (10 YR 8/2). Sand: 95%, very fine to fine grained, predominately fine grained, subangular to subrounded, Clay: 5%, sandstone is very well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, laminated horizontal and cross bedding, intensely jointed, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, trace iron oxidation on fracture faces, open fractures occur at bedding planes and are horizontal and smooth displaying infilling of clay and very fine sand.				5.4 ppm						96.7% Excellent
(120.4-120.5) VOCs AF			120.0	109.0 – 113.1' SANDSTONE: Light gray (10 YR 7/2). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, laminated and cross bedded, intensely jointed, semi-friable in strata that display a greater degree of jointing, trace pores and pits throughout, well cemented with quartz and clay, trace iron oxidation on fracture faces, open fractures occur at bedding planes and are horizontal and smooth displaying infilling of clay and very fine sand.						11.3%				
(121.5-121.6) VOCs BF			121.0	114.0 – 118.9' SANDSTONE: Light gray (10 YR 7/2). Sand: 95%, fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and display cross bedding (~10o), cross beds display coarsening upward grading, highly jointed, semi-friable in strata that display a greater degree of fracturing, trace pores and pits throughout, trace bioturbation where burrows are filled with										
(122-122.1)			122.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
VOCs f4				very fine sand and clay, well cemented with quartz and clay, trace iron oxidation on fracture faces, sandstone displays bands of oxidized iron staining that follow bedding planes from 119.5 – 119.9', healed horizontal hairline fractures that are filled with clay and very fine sand, open horizontal and low angle fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.										
(122.8-122.9) VOCs f4			123.0	119.0 – 124.0' SANDSTONE: Light gray (10 YR 7/1). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and display cross bedding (~20o), highly jointed, trace pores and pits throughout, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.										
	5.0'		124.0	124.0 – 125.2' SANDSTONE: Light gray (10 YR 7/1). Sand: 95%, fine to medium grained, predominately medium grained, subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and display shallow angle cross bedding, highly jointed, trace pores and pits throughout, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, trace laminated to very thin beds of sandstone cemented with pale green clay, sandstone displays bands of oxidized iron staining that follow bedding planes, little iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.				5.1 ppm						96.7% Excellent
(124.4-124.45) VOCs BF			125.0											
(125.2-125.8) PHYS PROP				125.2 – 125.8' PHYSICAL PROPERTIES SAMPLE						7.0%				
(125.8-125.9) VOCs BF			126.0											
(126.3-126.4) VOCs f4				125.8 – 129.0' SANDSTONE: Light gray (10 YR 7/1). Sand: 95%, fine to medium grained, predominately medium grained,										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
				subrounded to rounded, Clay: 5%, sandstone is moderately well sorted, moderately hard to hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and display shallow angle cross bedding, highly jointed, trace pores and pits throughout, trace bioturbation where burrows are filled with very fine sand and clay, well cemented with quartz and clay, trace laminated to very thin beds of sandstone cemented with pale green clay, sandstone displays bands of oxidized iron staining that follow bedding planes, little iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand.										
(127.4-127.5) VOCs BF			127.0											
(128-128.1) VOCs f6			128.0											
	4.7'		129.0	130.3 - 231.7' Elk Mound Group Wonewoc Formation: Galesville Member SANDSTONE: Medium grained, subround grains, soft to hard, poorly to well cemented, highly jointed, joints are horizontal, planar to cross bedding, laminated to very thin beds, friable near fracture faces, little clay to silt in beds, little to some iron staining at bedding planes, trace bioturbation, trace glauconite, trace pores to pits, secondary mineralization, moderate to high energy nearshore environment.				2.7 ppm						76.7% Good
(130-130.1) VOCs BF			130.0	129.0 – 131.8' SANDSTONE: Light gray (10 YR 7/2). Sand: 90%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 10%, sandstone is moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, moderate weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fractures, moderately well cemented with quartz and clay,										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
			131.0	sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand as well as iron precipitate. NOTE: Wonewoc Galesville member begins at ~130.3' bgs.										
(131.1-131.2) VOCs BET														
(131.8-131.9) VOCs BF			132.0	131.8 – 133.0' SANDSTONE: Light gray (10 YR 7/2). Sand: 100%, very fine to medium grained, predominately fine grained, subrounded to rounded, sandstone is very well sorted, very hard, fine grained, very slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, very well cemented with quartz, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, trace bioturbation where burrows are filled with oxidized clay, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand as well as iron precipitate.										
(132.3-132.4) VOCs f6			133.0	133.0 – 133.7' SANDSTONE: Light gray (10 YR 7/2) to yellow (10 YR 7/6). Sand: 90%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay: 10%, sandstone is moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, moderate weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fractures, moderately well cemented with quartz and clay, sandstone displays bands of oxidized iron staining that follow bedding planes, trace horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal and smooth to semi-rough displaying infilling of clay and very fine sand as well as iron precipitate.										
	4.7'		134.0					2.1 ppm						93.3% Excellent
(135-135.1) VOCs BF			135.0	134.0 – 138.8' SANDSTONE: Light gray (10 YR 7/1) to yellow (10 YR 7/6). Sand: 90%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 10%, sandstone is										

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
(135.9-136) VOCs BET			136.0	moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fracture faces, moderately well cemented with quartz and clay, trace bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace pores to vugs, pits and vugs are filled with very fine sand and oxidized clay, little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand, open fractures occur at bedding planes and are horizontal to shallow and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate.										
(136.9-137) VOCs BF			137.0											
(137.9-138) VOCs AF			138.0											
	5.0'		139.0	139.0 – 144.0' SANDSTONE: Light gray (10 YR 7/1) to yellow (10 YR 7/6). Sand: 90-95%, very fine to medium grained, predominately medium grained, subrounded to rounded, Clay and iron precipitate: 5-10%, sandstone is moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to				1.3 ppm						71.7% Fair

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
(139.8-140) VOCs AF			140.0	very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fracture faces, moderately well cemented with quartz and clay, little bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace pores to vugs, pits and vugs are filled with very fine sand and oxidized clay, little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to shallow and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate.										
(140.8-140.9) VOCs BF			141.0											
(141.5-141.6) VOCs f8										10.3%				
(142-142.1) VOCs f13			142.0											
			143.0											
	4.9'		144.0	144.0 – 146.1' SANDSTONE: Light gray (10 YR 7/1) to				4.2 ppm						85% Good

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
				yellow (10 YR 7/6). Sand: 90-95%, very fine to medium grained, predominately medium grained, subrounded to rounded, Clay and iron precipitate: 5-10%, sandstone is moderately sorted, soft to moderately hard, mostly moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fracture faces, moderately well cemented with quartz											
(145-145.1) VOCs BF			145.0	and clay, little bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace pores to vugs, pits and vugs are filled with very fine sand and oxidized clay, little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to shallow and are irregular to smooth displaying infilling of clay and very fine										
(146-146.1) VOCs BF			146.0	sand as well as iron precipitate.						9.4%				
(146-146.6) PHYS PROP				146.1 – 146.7' PHYSICAL PROPERTIES SAMPLE										
			147.0	146.7 – 149.0' SANDSTONE: White (10 YR 8/1) to yellow (10 YR 7/6). Sand: 90-95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5-10%, sandstone is moderately sorted, soft to										
(147.1-147.2) VOCs BF				moderately hard, mostly moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly jointed, friable near fracture faces, moderately well cemented with quartz and clay, little bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes,										
			148.0	trace pores to vugs, pits and vugs are filled with very fine sand and oxidized clay, little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to										
(148.2-148.3) VOCs AF														

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
				shallow and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate.										
	5.0'		149.0	149.0 – 154.0' SANDSTONE: White (10 YR 8/1) to yellow (10 YR 7/6). Sand: 90-95%, very fine to medium grained, predominately medium grained, subrounded to rounded, Clay and iron precipitate: 5-10%, sandstone is moderately sorted, moderately hard to soft, mostly moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly to moderately jointed, friable near fracture faces, moderately well cemented with quartz and clay, very well cemented with quartz cement from 149.6 – 150.2', little bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace pores to vugs, pits and vugs are filled with very fine sand and oxidized clay, little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to moderately dipping in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as iron precipitate.				1.3 ppm						58.3% Fair
			150.0											
(150.1-150.2) VOCs AF														
			151.0											
(151.5-151.6) VOCs BF														
			152.0											
(152.5-152.6) VOCs BF														

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
(153.3-153.4) VOCs BET			153.0											
	4.6'		154.0	154.0 – 158.5' SANDSTONE: White (10 YR 8/1) to yellow (10 YR 7/6). Sand: 90-95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5-10%, sandstone is moderately sorted, moderately hard to soft, mostly moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, highly to intensely jointed, friable near fracture faces, moderately well cemented with quartz and clay, little bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace pores to vugs, pits and vugs are filled with very fine sand and oxidized clay, little horizontal laminated partings of pale green shale, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.				2.9 ppm							33.3% Poor
(155-155.1) VOCs BF			155.0											
(155.9-156) VOCs BF			156.0											
(157-157.1) VOCs BET			157.0											

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
(158-158.1) VOCs BET			158.0											
	4.3'		159.0	159.0 – 161.9' SANDSTONE: White (10 YR 8/1) to yellow (10 YR 7/6). Sand: 90%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 10%, sandstone is moderately sorted, moderately hard to soft, mostly moderately hard, fine grained, slight to moderate weathering on outside of core as well as on the fracture faces, beds are horizontally laminated to very thinly bedded and also display shallow angle cross bedding, intensely jointed, friable near fracture faces, moderately well cemented with quartz and clay, little bioturbation where burrows are filled with clay and very fine sand and rimmed with iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, some horizontal laminated partings of pale green shale, shale partings increase with depth, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.				NM		13.8%				31.7% Poor
(159.9-160) VOCs BF			160.0											
(161-161.1) VOCs BF			161.0	161.9 – 162.8' SANDSTONE: White (10 YR 8/1). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is moderately sorted, moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated and also display										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments

(161.8-161.9) VOCs BET

shallow angle cross bedding, highly jointed, friable near fracture faces, moderately well cemented with quartz and clay , sandstone displays trace bands of oxidized iron staining that follow bedding planes, little horizontal laminated partings of pale green shale, little iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal to shallow in attitude and are irregular to smooth displaying infilling of clay and very fine sand as well as secondary mineralization of iron precipitate.

162.0

(162.8-162.9) VOCs BF

162.8 – 163.2'
SANDSTONE: Yellowish brown (10 YR 5/8) to dark yellowish brown (10 YR 4/6). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, predominately moderately hard, fine grained, moderate weathering, friable in strata that display greater percentages of fractures, trace bioturbation where burrows are filled with very fine sand and iron precipitate, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, intensely jointed, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, healed hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and fine to medium sand as well as secondary mineralization of iron precipitate.

163.0

164.0

4.7'

NM

81.7% Good

(164.6-164.7) VOCs AF

164.0 – 165.6'
SANDSTONE: Yellowish brown (10 YR 5/8) to dark yellowish brown (10 YR 4/6). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, predominately moderately hard, fine grained, moderate weathering, friable in strata that display greater percentages of fractures, trace bioturbation where burrows are filled with very fine sand and iron precipitate, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly to intensely jointed, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, little pores to vugs throughout, pits and vugs are filled with oxidized clay and very fine sand, healed hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of

165.0

(165.4-165.5) VOCs BF

166.0

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
(166.2-166.3) VOCs BF (166.2-166.7) PHYS PROP (166.7-166.8) VOCs f6			167.0	clay and fine to medium sand as well as secondary mineralization of iron precipitate. 165.6 – 166.2' SANDSTONE: Very pale brown (10 YR 8/3) to yellow (10 YR 7/6). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is well sorted, moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated, highly jointed, well cemented with quartz, sandstone displays bands of oxidized iron staining that follow bedding planes, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal and irregular to smooth displaying infilling of clay and very fine sand as well as heavy secondary mineralization of iron precipitate.						12.2%				
(167.6-167.7) VOCs BF			168.0	166.2 – 166.8' PHYSICAL PROPERTIES SAMPLE 166.8 – 167.4' SANDSTONE: Very pale brown (10 YR 8/3) to yellow (10 YR 7/6). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is well sorted, moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated, highly jointed, moderately well cemented with quartz, sandstone displays bands of oxidized iron staining that follow bedding planes, trace to little bioturbation where burrows are filled with oxidized clay, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal and irregular to smooth displaying infilling of clay and very fine sand as well as heavy secondary mineralization of iron precipitate.										
	4.8'		169.0					NM						83.3% Good
(170.1-170.2) VOCs f7			170.0	167.4 – 168.8' SANDSTONE: Yellowish brown (10 YR 5/8) to dark yellowish brown (10 YR 4/6). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, predominately moderately hard, fine grained, moderate weathering, trace bioturbation where burrows are filled with very fine sand and iron precipitate, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly to intensely jointed, moderately well cemented with iron										

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
				precipitate and quartz, sandstone is heavily oxidized with iron staining, little pores to vugs throughout, pits and vugs are filled with oxidized clay and very fine sand, healed hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and fine to medium sand as well as secondary mineralization of iron precipitate.										
			171.0	169.0 – 173.7' SANDSTONE: Yellowish brown (10 YR 5/8) to dark yellowish brown (10 YR 4/6). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, predominately moderately hard, fine grained, moderate weathering, trace bioturbation where burrows are filled with very fine sand and iron precipitate, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly jointed, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, bands of heavier iron staining and cementation increase with depth, little pores to pits throughout, hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and fine to medium sand as well as secondary mineralization of iron precipitate.										
(171.4-171.5) VOCs BF														
(171.9-172) VOCs BF			172.0											
			173.0	174.0 – 174.8' SANDSTONE: Yellowish brown (10 YR 5/8) to dark yellowish brown (10 YR 4/6). Sand: 90%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 10%, sandstone is moderately well sorted, moderately hard to soft, predominately moderately hard, fine grained, moderate weathering, trace bioturbation where burrows are filled with very fine sand and iron precipitate, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly jointed, moderately well cemented with iron precipitate and quartz, sandstone is heavily oxidized with iron staining, bands of heavier iron staining and cementation increase with depth, little pores to pits throughout, hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and fine to medium sand as well as secondary mineralization of iron precipitate, lens of very fine to fine grained white sandstone from 174.7-174.8'.										
(173-173.1) VOCs AF														
	5.1'		174.0					NM						68.3% Fair
(174.6-174.7) VOCs BF				174.8 – 177.6'										

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Placticity Index	P 200	
(175.5-175.6) VOCs BF			175.0	SANDSTONE: Yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately medium grained, subrounded to rounded, clay and iron precipitate: 5%, sandstone is moderately well sorted, moderately hard to soft, predominately moderately hard, fine grained, moderate weathering, trace bioturbation where burrows are filled with very fine sand and iron precipitate, beds are horizontally laminated to very thinly bedded and also display low angle cross bedding, highly jointed, moderately well to poorly cemented with iron precipitate and quartz, sandstone is heavily oxidized and exhibits limonite and iron staining, sandstone has bands of heavier iron precipitation and cementation throughout, little pores to pits throughout, hairline fractures are filled with iron precipitate, fractures are horizontal to shallow in attitude and are irregular and smooth displaying infilling of clay and fine to medium sand as well as secondary mineralization of iron precipitate, silty fine grained sand lenses throughout the core from 177.1 – 177.6'.										
			176.0											
(176.9-177) VOCs BF			177.0											
				177.6 – 179.0' SANDSTONE: Very pale brown (10 YR 8/3) to yellow (10 YR 7/6). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and iron precipitate: 5%, sandstone is well sorted, moderately hard, fine grained, slight weathering on outside of core as well as on the fracture faces, beds are horizontally laminated as well as cross bedded, highly to intensely jointed, moderately well cemented with quartz and iron precipitate, sandstone displays bands of oxidized iron staining that follow bedding planes, trace to little bioturbation where burrows are filled with oxidized clay, little to some iron oxidation on fracture faces, healed horizontal hairline fractures that are filled with clay and very fine sand as well as iron precipitate, open fractures occur at bedding planes and are horizontal and irregular to smooth displaying infilling of clay and very fine sand as well as heavy secondary mineralization of iron precipitate.										
			178.0											
(178.3-178.4) VOCs BET														
			179.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			180.0											
(180.5-180.6) VOCs BET (181.1-181.2) VOCs AF	1.6'		181.0 182.0 183.0	180.0 – 181.6' SANDSTONE: Brownish yellow (10 YR 6/8) to yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is moderately sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, laminated to very thin horizontal and cross beds, sandstone displays bands of oxidized iron staining that alternate and vary in degree of iron concentration and follow bedding planes, pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, horizontal hairline healed fractures are filled with iron precipitate, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				1.93 ppm						0% Very Poor

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
			184.0											
	4.8'			184.0 – 187.4' SANDSTONE: Brownish yellow (10 YR 6/8) to yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is moderately sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, laminated to very thin horizontal and cross beds, sandstone displays bands of oxidized iron staining that alternate and vary in degree of iron concentration and follow bedding planes, pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, horizontal hairline healed fractures are filled with iron precipitate, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				2.2 ppm							38.3% Poor
(184.9-185) VOCs AF			185.0											
			186.0											
(186.3-186.4) VOCs AF														
			187.0											
(187.2-187.3) (VOCs 187.9) PHYS PROP				187.4 – 188.1' PHYSICAL PROPERTIES SAMPLE						13.0%				
(187.9-188) VOCs			188.0	188.1' – 188.9' SANDSTONE: Brownish yellow (10 YR 6/8) to yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is moderately sorted, moderate to poorly cemented with quartz										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
BF				and iron precipitate cement, soft and friable, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, laminated to very thin horizontal and cross beds, sandstone displays bands of oxidized iron staining that alternate and vary in degree of iron concentration and follow bedding planes, pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, horizontal hairline healed fractures are filled with iron precipitate, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
	4.1'		189.0	189.0 – 189.9' SANDSTONE: Brownish yellow (10 YR 6/8) to yellowish brown (10 YR 5/8). Sand: 95%, very fine to medium grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is moderately sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, moderate weathering on the outside of the core as well as on the fracture faces, laminated to very thin horizontal and cross beds, sandstone displays bands of oxidized iron staining that alternate and vary in degree of iron concentration and follow bedding planes, pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, horizontal hairline healed fractures are filled with iron precipitate, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				3.27 ppm						13.3% Very Poor
(189.5-189.6) VOCs BET			190.0											
(190.9-191) VOCs BF			191.0	189.9 – 193.0 SANDSTONE: Olive yellow (2.5 Y 6/6). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly bedded and trace laminated cross beds, bedding planes become less apparent and abundant with depth, sandstone displays trace bands of oxidized iron staining and follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pores and pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open,										
(191.7-191.8) VOCs AF														
(192.1-192.2) VOCs BF			192.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				predominately open, vertical healed hairline fractures are visible on fracture faces and are filled with iron oxidized clay, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
			193.0											
	4.9'		194.0	194.0 – 195.7' SANDSTONE: Olive yellow (2.5 Y 6/6). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly bedded and trace laminated cross beds, sandstone displays trace faint bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				1.5 ppm						48.3% Poor
(194.6-194.7) VOCs AF			195.0											
(195.4-195.5) VOCs BF				195.7 – 198.7' SANDSTONE: Pale yellow (2.5 Y 7/4) to yellow (2.5 Y 7/8). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally laminated to thinly bedded and trace laminated cross beds, sandstone displays trace faint bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits,										
			196.0											
(196.3-196.4) VOCs AF														
(196.8-196.9)														

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
VOCs f4			197.0	fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and limonite and in filling of clay and very fine sand.										
(197.9-198) VOCs BET			198.0											
	5.0'		199.0	199.0 – 204.0' SANDSTONE: Yellow (2.5 Y 7/8) to (2.5 Y 7/6). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally thinly bedded and trace laminated cross beds, sandstone displays trace bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, predominately highly jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, healed horizontal and shallow angle hairline fractures are filled with iron precipitate and follow bedding planes, open fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are smooth due to friability and display secondary mineralization of iron precipitate and limonite and in filling of clay and very fine sand.				NM						78.3% Good
(199.7-199.8) VOCs AF			200.0											
(200.6-200.7) VOCs BET			201.0											

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
(201.6-201.7) VOCs f6			202.0											
(203-203.1) VOCs BF			203.0	204.0 – 204.9' SANDSTONE: Yellow (2.5 Y 7/8) to (2.5 Y 7/6). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally thinly bedded and trace laminated cross beds, sandstone displays trace bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, predominately highly jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, healed horizontal and shallow angle hairline fractures are filled with iron precipitate and follow bedding planes, open fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular to smooth and soft due to friability and display secondary mineralization of iron precipitate and limonite and in filling of clay and very fine sand.									
	4.1'		204.0					2.6 ppm						30% Poor
(204.6-204.7) VOCs BF														
(204.9-205.4) PHYS PROP			205.0	204.9 – 205.4' PHYSICAL PROPERTIES SAMPLE						14.1%				
				205.4 – 208.3' SANDSTONE: Yellow (2.5 Y 7/8) to (2.5 Y 7/6). Sand: 95%, very fine to fine grained, predominately fine grained,										

Sample: Fracture Surface Samples	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Placticity Index	Soil Properties: P 200	RQD/ Comments
(205.8-205.9) VOCs AF (206.2-206.3) VOCs BF (206.9-207) VOCs BET			206.0 207.0 208.0	subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, very poorly cemented from 207.9 – 208.3', soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally thinly bedded to laminated shallow angle cross beds, predominately laminated shallow angle cross beds, sandstone displays trace bands of oxidized iron and limonite staining that follow bedding planes, highly to intensely jointed, predominately highly jointed, pores to pits throughout, trace pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, healed horizontal and shallow angle hairline fractures are filled with iron precipitate and follow bedding planes, open fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular to smooth and soft due to friability and display secondary mineralization of iron precipitate and limonite and in filling of clay and very fine sand.						14.7%				
(209.8-209.9) VOCs AF	4.8'		209.0 210.0	209.0 – 213.7' SANDSTONE: Pale yellow (2.5 Y 8/2) to yellow (2.5 Y 7/8). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to subangular, Clay and Iron precipitate: 5%, sandstone is well sorted, moderate to poorly cemented with quartz and iron precipitate cement, soft and friable, fine grained, slight weathering on the outside of the core as well as on the fracture faces, horizontally thinly bedded to laminated shallow angle cross beds, predominately laminated shallow angle cross beds, sandstone displays some bands of oxidized iron and limonite staining that follow bedding planes, trace laminated pale green shale				5.01 ppm						53.3% Fair

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
				partings that follow bedding planes, highly to intensely jointed, predominately highly jointed, pores to pits throughout, little pores and pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, little to some bioturbation where burrows are filled with pale green clay and rimmed with iron precipitate, healed horizontal and shallow angle hairline fractures are filled with iron precipitate and follow bedding planes, open fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular to smooth and soft due to friability and display secondary mineralization of iron precipitate and limonite and in filling of clay and very fine sand.										
			211.0											
(211.1-211.2) VOCs f9														
			212.0											
(212.2-212.3) VOCs AF														
			213.0											
(213.1-213.2) VOCs AF														
	2.8'		214.0	214.0 – 216.7' SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz				3.55 ppm						0% Very Poor

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Soil Properties				RQD/ Comments
Fracture Surface Samples	Length Att. & Recovered (in)									Moisture Content	Liquid Limit	Plasticity Index	P 200	
(214.8-214.9) VOCs BET			215.0	cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, laminated clay bed at 214.3', trace pores to pits throughout, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, horizontal hairline healed fractures are filled with iron precipitate, fractures range from tight to open, predominately tight, fracture faces are horizontal and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
(216.1-216.2) VOCs BF			216.0											
			217.0											
			218.0											

Sample											Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
	4.4'		219.0	**219.0 – 223.3'** SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately open, fracture faces are horizontal to irregular and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.				2.46 ppm						23.3% Very Poor
(219.8-219.9) VOCs AF			220.0												
			221.0												
(221.2-221.3) VOCs BF			222.0												
(222.6-222.7) VOCs BF			223.0												

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				224.0 – 225.2' SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately open, fracture faces are horizontal to irregular and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
	4.9'		224.0					9.7 ppm						31.7% Poor
(224.8-224.9) VOCs BET			225.0							16.5%				
(225.2-225.7) PHYS PROP				225.2 – 225.6' PHYSICAL PROPERTIES SAMPLE						13.7%				
				225.6 – 228.8' SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately open, fracture faces are horizontal to irregular and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand.										
(226.3-226.4) VOCs BET			226.0											
(227.4-227.5) VOCs BF			227.0											

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
(228-228.1) VOCs BET			228.0											
	4.7'		229.0	229.0 – 231.7' SANDSTONE: Pale yellow (2.5 Y 7/3). Sand: 95%, very fine to fine grained, predominately fine grained, subrounded to rounded, Clay and Iron precipitate: 5%, sandstone is very well sorted, moderate to poorly cemented with quartz cement, soft and friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, laminated clay and oxidized iron precipitate beds at 229.7' and 231.1', sandstone displays trace bands of faint oxidized iron staining that follow bedding planes, pores and pits throughout, trace pores and pits are filled with iron nodules and have iron and limonite staining/precipitation rimming the pits, highly to intensely jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately open, fracture faces are horizontal to irregular and smooth due to friability and display secondary mineralization of iron precipitate and in filling of clay and very fine sand. NOTE: Eau Claire Formation begins at ~231.7' bgs.				1.95 ppm					15% Very Poor
(229.5-229.6) VOCs BET			230.0											
(230.9-231) VOCs BF			231.0											
(232-			232.0	231.7 - EOB Elk Mound Group Eau Claire Formation SANDSTONE: very fine to fine grained, subround grains, moderately hard, moderately cemented, highly jointed, joints are horizontal, little hairline vertical fractures, planar to irregular bedding, laminated to very thin beds, friable at fracture faces, interbedded shale and										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Placticity Index	P 200	RQD/ Comments
232.1) VOCs BET				sandstone, shale partings to laminations along bedding planes, trace pits, trace iron staining, low to moderate nearshore environment.										
(233.1-233.2) VOCs BF			233.0	231.7 – 233.5' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is very well sorted, moderately cemented with quartz cement, semi-friable and soft, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, some bioturbation where burrows are filled with a bluish-gray very fine grained silty sand and clay, secondary mineralization of pyrite, highly to intensely jointed, predominately highly jointed, fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are horizontal to irregular and are smooth due to friability and display in filling of clay and very fine sand.										
	2.8'		234.0	234.0 – 234.4' SANDSTONE: White (2.5 YR 8/1). Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is well sorted, moderately hard, moderately well cemented with clay and quartz cement, semi-friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, little horizontal to shallow angle laminated partings of pale green shale that follow bedding planes, little bioturbation where burrows are filled with a bluish-gray very fine grained silty sand and clay, highly jointed, sandstone contains little pyrite mineralization throughout that are very fine grained in size, little pores to vugs throughout, pits and vugs are filled with very fine sand and clay as well as secondary mineralization of euhedral pyrite, little vertical hairline fractures are filled with very fine sand, open fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular and are smooth due to friability and display in filling of clay and very fine sand as well as pyrite.				8.1 ppm		9.0%				50% Fair
(234.3-234.8) PHYS PROP														
(234.8-234.9) VOCs AF			235.0											
(236-236.1) VOCs BF			236.0	234.4 – 234.9' PHYSICAL PROPERTIES SAMPLE										
				234.9 – 236.8' SANDSTONE: White (2.5 YR 8/1).										

Sample										Soil Properties				
Fracture Surface Samples	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			237.0	Sand: 95%, very fine to fine, predominately very fine, subangular to subrounded, Clay: 5%, sandstone is well sorted, moderately hard, moderately well cemented with clay and quartz cement, semi-friable, fine grained, very slight weathering on the outside of the core as well as on the fracture faces, bedding is horizontally laminated to laminated shallow angle hummocky cross beds, predominately laminated cross beds, little horizontal to shallow angle laminated partings of pale green shale that follow bedding planes, little bioturbation where burrows are filled with a bluish-gray very fine grained silty sand and clay, highly jointed, sandstone contains little pyrite mineralization throughout that are very fine grained in size, little pores to vugs throughout, pits and vugs are filled with very fine sand and clay as well as secondary mineralization of euhedral pyrite, little vertical hairline fractures are filled with very fine sand, open fractures occur at bedding planes and are horizontal to shallow in attitude, fractures range from tight to open, predominately tight, fracture faces are irregular and are smooth due to friability and display in filling of clay and very fine sand as well as pyrite.										
	0.0'							NM						NM
			238.0	EOB **at 237.0'**										
			239.0	NOTE:										

BET - Between closely spaced fractures.
AF - Above Fracture Surface.
BF - Below fracture surface.
BKN - Broken or crumbled section.
NA - Not applicable.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp	— — — — — — — —	MW-6

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Kevin McCumber	02 / 04 / 03 (MM / DD / YY)	02 / 04 / 03 (MM / DD / YY)	4 1/4" ID HSA/ Air Rotary

DNR Facility Well No.	WT Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-6S	_____ Feet MSL	_____ Feet MSL	8.5 inches

Boring Location
State Plane _____ N. _____ E S/C/N
SW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E

Lat — — —
Long — — —

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	1 3	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/Comments
			1	Asphalt Parking Lot										
			2	Blind Drill to 41.4 feet BGS Well screened from 41.4 to 31.4 feet BGS										
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm URS Corporation, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $4,000 for each violation. Fines not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

MK001343

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp		MW-6D

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Badger State Drilling--Kevin McCumber	02 / 03 / 03 (MM DD YY)	02 / 04 / 03 (MM DD YY)	6 1/4" ID HSA/ Air Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-6D	Feet MSL	Feet MSL	10.5 inches

Boring Location
State Plane _____ N. _____ E S/C/N
SW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E
Lat — — —
Long — — —

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	13	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/Comments
			1	Asphalt Parking Lot										
			1	FILL, gravelly, sandy, silty, brown	GM									
			2											
			3											
1	19	11,8 12,17	4	CLAY, silty, stiff, slightly moist, low plasticity, light brown	CL				20					
			5											
			6											
			7											
			8											
2	18	13,15 16,19	9	SAND, gravelly, fine to medium grained, dense, slightly moist, light brown to reddish brown.	SP				31					
			10											
			11											
			12											
3	16	29,37 24,34	13	SAND, as above, very dense, light brown					61					
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm URS Corporation, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $4,000 for each violation. Fines not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

MK001344

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-6D

Sample Number	Sample Length Recovered (IN)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			15	SAND, as above, very dense, light brown										
			16											
			17											
4	20	23,32 36,38	18	SAND, as above	SP				68					
			19											
			20											
			21											
			22											
5	14	39, 50/4	23	SAND, as above, very dense, brown										
			24											
			25											
			26											
			27											
			28		SP									
6	12	26,39 64/4	29	SAND, as above										
			30											
			31											
			32											
			33											
7	6	50/1 50/4	34	SANDSTONE, glauconitic, very weathered, slightly moist, no odor, dull green to brownish green.	BR									
			35											
			36											

MK001345

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-6D

Sample Number	Sample Length Recovered (IN)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			36	SANDSTONE, as above, increasing moisture with depth										
			37											
			38											
			39											
			40		BR									
			41											
			42	SANDSTONE, brown, increasing moisture with depth										
			43											
			44											
			45											
			46	SANDSTONE, as above, wet										
			47											
			48											
			49											
			50											
			51											
			52											
			53											
			54											
			55											
			56											
			57											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-6D

Sample Number	Sample Length Recovered (IN)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			58	SANDSTONE, as above, brown, wet Slight to moderate petroleum odor in water/cutting discharging borehole	BR									
			59											
			60											
			61											
			62											
			63											
			64											
			65											
			66											
			67	SANDSTONE, as above, wet										
			68											
			69											
			70											
			71	EOB @ 70.8 ft. Well screened from 65.8 to 70.8 ft. BGS										
			72											
			73											
			74											
			75											
			76											
			77											
			78											
			79											

BADGER STATE DRILLING CO., INC.

STOUGHTON, WISCONSIN

FOR Madison Kipp

LOCATION Madison, WI ELEV.

FIELD BORING LOG

Sheet 1 Of 1

Job No. 5622

Boring No. MW-7

GROUND WATER

While drilling ____ Time after drilling ____

Before casing removal ____ Depth to water ____

After casing removal ____ Depth to cave-in ____

Start 7-25-11

Unit D-120

Chief A.P.-K.D.

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	VISUAL FIELD CLASSIFICATION AND REMARKS	Casing/Probe / Weight / Drop	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						Blind Drill 4¼ HSA to 35'				4¼		HSA
						E.O.B. 35'						
						SCREEN 35'-25'						
						RISER 25'-FLUSH						
						(3) FILTER 35'-23'						
						(0) FINE 23'-21'						
						(10) CHIPS 21'-1'						
						(1) FLUSH MONUT						
						(0) CONCRETE						

5 10 15 20 25 30 35 40 45 50

RJN003723

BADGER STATE DRILLING CO., INC.

STOUGHTON, WISCONSIN

FIELD BORING LOG

Sheet 1 Of 1

FOR MADISON, WI

LOCATION MADISON, WI ELEV.

Job No. 5622

Boring No. MW-8

GROUND WATER

While drilling ____ Time after drilling ____

Before casing removal ____ Depth to water ____

After casing removal ____ Depth to cave-in ____

Start 7-25-11

Unit D-120

Chief K.T.-K.D.

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	VISUAL FIELD CLASSIFICATION AND REMARKS	Casing/Probe / Weight / Drop	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						BLIND DRILL 4¼ HSA TO 34'				4¼		CME
						E.O.B. 34'						
						SCREEN 34'-24'						
						RISER 24'-FLUSH						
						(5) FILTER 34'-22'						
						(1) FINE 22'-20'						
						CHIPS 20'-1'						
						(1) CONCRETE						
						(1) FLUSH MOUNT						

RJN003725

BADGER STATE DRILLING CO., INC.

STOUGHTON, WISCONSIN

FIELD BORING LOG

Sheet 1 Of 1

Job No. 5622

Boring No. 9

FOR MADISON KIPP

LOCATION MADISON ELEV.

GROUND WATER

While drilling ____ Time after drilling ____

Before casing removal ____ Depth to water ____

After casing removal ____ Depth to cave-in ____

Start 7-26-11

Unit D-120

Chief A.P.-Kipp

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	VISUAL FIELD CLASSIFICATION AND REMARKS	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						Casing/Probe ____ Weight ____ Drop ____					
						BEGAN DRILL 6¼ HSA TO 28'					HSA
						SWITCHED TO AIR ROTARY @ 28' 5 7/8 RB					AR 2.5
						DRILLED TO 35'					
						ADVANCED 6¼ AUGERS TO 37'					HSA
						SWITCHED BACK TO AIR ROTARY 5 7/8 ROLLER BIT					AR 2.5
						SCREEN 49'-44'					
						RISER 44'-FLUSH					
						(3) FILTER 49'-42'					
						(1) FINE 42'-40'					
						(40) CHIPS 40'-↑					
						E.O.B. 49' ① CONCRETE ① FLUSH MOUNT					

RJN003727

BADGER STATE DRILLING CO., INC.

STOUGHTON, WISCONSIN

FIELD BORING LOG

Sheet 1 Of 2

FOR MADISON KIPP

LOCATION MADISON ELEV.

Job No. 5622

Boring No. 10

GROUND WATER

While drilling ____ Time after drilling ____

Before casing removal ____ Depth to water ____

After casing removal ____ Depth to cave-in ____

Start 7-27-11

Unit D-126

Chief A.A.-K.D.

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	VISUAL FIELD CLASSIFICATION AND REMARKS	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						BLIND DRILL 6¼ HSA TO			6¼		HSA
						AUGER REFUSAL 37'					AR
						SWITCHED TO AIR ROTARY 5⅞ RB					RB

Casing/Probe ____

Weight ____

Drop ____

RJN003729

BADGER STATE DRILLING CO., INC.

STOUGHTON, WISCONSIN

FOR MADISON KIPP

LOCATION MADISON ELEV.

FIELD BORING LOG

Sheet 2 of 2

Job No. 5622

Boring No. 10

GROUND WATER

While drilling ____ Time after drilling ____

Before casing removal ____ Depth to water ____

After casing removal ____ Depth to cave-in ____

Start 7-27-11

Unit D-120

Chief A.R.-K.D.

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	VISUAL FIELD CLASSIFICATION AND REMARKS	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						STARTS @ 50'					

Casing/Probe ____ Weight ____ Drop ____

E.O.B. 69'

SCREEN 68'-64'

RISER 64'-FLUSH

(3) FILTER 68'-62'

(1) FINE 62'-60'

(45) CHIPS 60'-1'

(1) CONCRETE

(1) FLUSH MOUNT

RJN003730

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		MW-10S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Ryan Last Name Fett Firm Giles Engineering, Inc.	04/04/12	04/04/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
OY905		MW-10S	_____ Feet	_____ Feet MSL	2 inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400047.9 N, 2143831.5 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____ Long _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/(City)/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	21.6	221	0	0-2.0'/ 0.0-0.2' Asphalt. 0.2-1.5' Fill: Asphalt, moist, silt, sand, gravel. 1.5-1.8' Clay: Dark yellowish brown (10 YR 4/6), little silt, trace organics, well sorted, medium plasticity, soft (HP = 1.5), moist, no odor.				0.0							
2	19.2	2244	2	2.0-4.0'/ 0.0-1.6' Clay: Same as above. Note: Firmer (HP = 2.5).				0.0						
3	24	2233	4	4.0-6.0'/ 0.0-2.0' Clay: Same as above. Note: Little sand, subangular to subrounded, very fine to fine grained, wet seam at 1.7'.				0.0						
4	18	222	6	6.0-8.0' 0.0-1.5' Sand: Some silt, dark yellowish brown (10 YR 4/4), trace organics, trace pyrite, sand is very fine to fine grained, subangular to subrounded, well sorted, no plasticity, loose and poorly indurated, very soft (HP = 2.5). Note: No odor, wet seam at 0.2', sandstone clast .5" in diameter at 1.5".				0.0						
5	19.2	1343	8	8.0-10.0' 0-1.6' Sand: Same as above. Note: Trace gravel throughout, 1/4-1/8", mostly 1/4", subangular to subrounded, loose, color change to yellowish brown (10 YR 5/8).				0.0						
6	18	3464	10	10.0-12.0'/ 0.0-1.5' Silty Sand: Yellowish brown (10 YR 5/8),				0.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any purpose. NOTE: See instructions for more information, including where the completed from should be sent.

madison-kipp/WI001283/graphics/logs/mw10s.ai

Boring Number MW-10S

Sample Number and Type	Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			12	50 percent silt, 50 percent sand, sand is very fine to fine grained, subangular to subrounded, trace gravel, 1/4" to 1/8", subangular to subrounded, trace organics, no plasticity, loose and poorly indurated, very soft (HP = 0.5), poorly sorted, moist, no odor.										
7	16.8	4 4 4 6		12-14'/ 0.0-1.4' Same as above.				0.0						
8	21.6	1 4 4 3	14	14-16'/ 0.0-1.8' Silty Sand: Same as above, wet at 1.2'.				0.0						
9	18	2 2 6 18	16	16-18'/ 0.0-1.5' Silty Sand: Same as above. Note: Very wet, trace to some gravel, 1/4" diameter, subangular to subrounded, fining upward progression with medium grained sand from 1.2-1.5'.				0.0						
10	2.4	6 12 20 26	18	18-20'/ 0.0-0.2' Sand: Yellowish brown (10 YR 5/8), very fine to fine grained, subangular to subrounded, some silt to trace, some gravel, 1/4" to 1/8", mostly 1/4", nonplastic, loose, poorly sorted, moist to wet, no odor.				0.0						
11	22.8	18 18 21 15	20	20-22'/ 0.0-1.9' Sand: Same as above. Note: No odor, last 6" sand grades to medium grained, subangular to subrounded.				0.0						
			22	EOB @ 22'										
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		MW-11S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Ryan Last Name Fett Firm Giles Engineering, Inc.	04/10/12	04/10/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
OY906		MW-11S	_____ Feet	_____ Feet MSL	8 inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 399676.7 N, 2144367.7 E S☐/C☐/N☐ E☐/W☐ Lat _____ Long _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N,R _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	12	3 3 3 2	0	0-2.0'/ 0.0-0.4' Topsoil. 0.4-1.0' Clay: Some silt, well sorted, medium plasticity, medium stiff (HP = 2.5), moist, trace organics, dark yellowish brown (10 YR 3/6). Note: No odor.				0.0						
2	13.2	2 3 2 3	2	2.0-4.0'/ 0.0-1.1' Silty Clay: Trace sand, sand is very fine to fine, subangular to subround, trace small pebbles, 1/8-1/4" in size, subangular to subrounded, medium plasticity, soft (HP = 1.5), poorly sorted, moist, dark yellowish brown (10 YR 4/6). Note: Trace organics and wood chips approximately 1" in size.				2.50						
3	14.4	2 2 4 3	4	4.0-6.0'/ 0.0-0.8' Silty Clay: Same as above. Note: Silty sand seams approximately 1/2" in width at 0.6'. 0.8-1.2' Silty Sand: Sand is very fine to fine, subangular to subrounded, trace to some gravel, 1/8-1/4" in size, mostly 1/8", subangular to subrounded, trace organices and roots, poorly sorted, nonplastic, loose, moist, yellowish brown (10 YR 5/8). Note: No odor.				3.87						
4	7.2	7 17 21 12	6					0.81						
5	15.6	2 3 7 7 6	8	6.0-8.0' 0.0-0.6' Silty Sand: Same as above. Note: Large pebbles 1/2-1-1/2" in size, angular. 8.0-10.0' 0-0.6' Silty Sand: Same as above. 0.6-1.3' Sand: Little to some silt, sand is very fine to fine grained, mostly very fine, trace to little gravel, 1/4-1/2", mostly 1/4" in size, subangular to subrounded, dolomite, poorly sorted, yellowish				0.0						
6	NR	6 4 5 6	10					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Boring Number MW-11S

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
				brown (10 YR 5/8), non-plastic, loose, moist, Note: No odor, black and dark green staining throughout. 10-12'/ No recovery.										
7	24	7 7 8 7	12	12-14'/ 0.0-2.0' Sand: Same as above. Note: Increasing silt percent, dolomite gravel increasing in size up to 3/4-1", mostly 3/4", angular.				0.0						
8	20.4	7 9 17 12	14	14-16'/ 0.0-1.7' Silty Sand: Sand is subangular to sub-rounded, very fine to fine grained, some gravel, dolomite and chert, 1/4-1/2", mostly 1/4", angular and fractured, poorly sorted, yellowish brown (10 YR 5/6) , nonplastic, loose, moist. Note: No odor.				0.0						
9	24	8 16 17 16	16	16-18'/ 0.0-2.0' Silty Sand: Same as above. Note: Dolomite gravel increasing in size to 1-1-1/2", angular and fractured.				0.14						
10	21.6	16 39 31 50	18	18-20'/ 0.0-0.8' Silty Sand: Same as above. 0.8-1.8' Silty Sand: Sand is very fine to fine grained, mostly very fine, subangular to subrounded, some gravel, dolomite, 1/8-1", mostly 1/8-1/4", angular to subangular, poorly sorted, yellowish brown (10 YR 5/6), low plasticity to non-plasticity, loose and very soft (HP= 0.5), moist. Note: No odor, dolomite gravel lens at 0.8-1.0', white weathering to outside of sediment and gravel				3.73						
11	18	32 33 39 50	20	20-22'/ 0.0-1.5' Silty Sand: Same as above. Note: Dolomite gravel increasing to 1" to 1-1/2", angular.				0.31						
12	16.8	32 37 50 50	22	22-24'/ 0.0-1.4' Silty Sand: Same as above. Note: Gravel lens at 1.2-1.4', sand lens at 0.8-0.9', subangular to subrounded, medium grained.				4.45						
13	20.4	7 23 26 30	24	24-26'/ 0.0-1.7' Sand: Some silt, sand is very fine to fine grained, mostly fine, subangular to subrounded, some gravel, dolomite, 1/8-1/4", mostly 1/4", angular and fractured, poorly sorted, yellowish brown (10 YR 5/6), low plasticity, soft (HP= 1.5), moist.				2.83						
14	18	38 40 67 42	26	Note: No odor, white sandstone lens at 1.6-1.7', subangular to subrounded, fine grained, slow dilatancy, slightly wet. 26-28'/ 0.0-1.5' Silty Sand: Same as abaove. Note: Wet.				13.38						
15	24	12 33 40 41	28	28-30'/ 0.0-2.0' Silty Sand: Same as above. Note: Wet on outside of core, slow dilatancy, white				22.91						

Boring Number MW-11S

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			30	sand lens at 0.2-0.3', subangular to subrounded, fine grained.										
16	20.4	7 30 42 40	32	30-32'/ 0.0-1.7' Silty Sand: Same as above. Note: Orange and red staining throughout, wet.				17.68						
17	9.6	6 23 20 50	34	32-34'/ 0.0-0.8' Silty Sand: Same as above. Note: Wet, color change to yellowish brown and slightly gray (10 YR 5/4)				3.40						
18	19.2	7 23 39 50	36	34-36'/ 0.0-1.6' Silty Sand: Sand is very fine to fine grained, mostly fine, subangular to subrounded, little gravel, dolomite, 1/4-1/2", mostly 1/4", angular to subangular, poorly sorted, light yellowish brown (10 YR 6/4), loose to low plasticity, soft (HP = 1.5), very wet. Note: No odor. EOB @ 36'				7.47						
			38											
			40											
			42											
			44											
			46											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		MW-12S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Ryan Last Name Fett Firm Giles Engineering, Inc.	04/10/12	04/10/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
OY907		MW-12S	_____ Feet	_____ Feet MSL	8 inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400535.3 N, 2144281.8 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ Long _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	12	2 3 3 3	0	0-2.0'/ 0.0-1.0' Topsoil.										
2	12	2 2 2 3	2	2.0-4.0'/ 0.0-1.0' Clay: Little silt, moist, stiff (HP = 2.5), medium to high plasticity, dark yellowish brown (10 YR 4/4), trace organics. Note: No odor, orange and gray mottling.				0.00						
3	18	2 2 3 3	4	4.0-6.0'/ 0.0-1.5' Clay: Little silt, trace sand, moist, stiff (HP = 2.5). medium to high plasticity, dark yellowish brown (10 YR 4/4), trace organics and black roots. Note: No odor, strong color streams of gray and orange mottling throughout, color change to dark grayish brown at 1.2'.				0.00						
4	20.4	3 2 3 3	6	6.0-8.0' 0.0-0.4' Clay: Same as above. 0.4-1.4' Silty Sand: Silt and sand, very wet and soupy, sand is very fine to fine grained, mostly fine subangular to subrounded, little to no plasticity, loose, dark yellowish brown (10 YR 3/6). Note: No odor.				0.00						
5	9.6	3 4 5 6	8	1.4-1.7' Clay: Little silt, trace sand, wet, stiff (HP = 2.5), medium to high plasticity, dark yellowish brown (10 YR 4/4), trace organics. Note: No odor. 8.0-10.0' 0-0.8' Silty Sand: Silt and sand, sand is very fine to fine, mostly fine, subangular to suborunded, trace gravel, 1/8" to 1/4", mostly 1/4", subangular				4.34						
6	13.2	2 2 6 4	10					0.78						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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madison-kipp/WI001283/graphics/logs/mw12s.ai

Boring Number MW-12S

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	to subrounded, poorly sorted, non-plastic, loose, dark yellowish brown (10 YR 4/6). Note: No odor, very wet. 10-12'/ 0.0-1.1' Silty Sand: Same as above. Note: Very wet, no odor.										
7	21.6	1 1 2 3		12-14'/ 0.0-1.8' Silty Sand: Same as abve. Note: Very wet and soupy, no odor.				0.0						
			14	EOB @ 14'										
			16											
			18											
			20											
			22											
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/201 Waubesa/WI001283.0009.00003		MP-13

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	09/24/12	09/30/12	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MP-13	_____ Feet	864.49 Feet MSL	8" to 37' 6" to 200' inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400296.49 N, 2144079.14 E S☐/C☐/N☐ E☐ W☐ Lat _____ Long _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N,R _____
Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-14'/ Blind drill.										
2	9.6	6 8 14 17	14	14-16'/ 14-14.4' Clay: Trace to little sand, very fine to fine, subangular to subround, trace silt, trace very fine slag throughout, medium to high plasticity, moist, soft (HP = 1.0), poorly sorted, silt partings throughout, pocketes of orange oxidized iron staining, strong odor, dark brown (10 YR 3/3).				0.6						
3	14.4	4 6 5 8	16	14.4-14.8' Pulverized granite and dolostone fragments. 16-18'/ 16-17.2' Sand: Sand is very fine to medium, mainly very fine to fine, subangular to subround, some silt, little clay, trace to little gravel, 1/8" - 1.5",				3.5						
4	13.2	3 6 6 7	18	mainly 1/8-1/2", subround, poorly sorted, medium plasticity, rapid dilatany, wet, medium dense, very soft (HP = <0.5), no odor, yellow brown (10 YR 5/4). 18-20'/ 18-19.1' Sand: Sand is very fine to medium, mainly very fine to fine, subangular to subround, some				3.7						
5	10.8	2 4 7 16	20	silt, little clay, trace to little gravel, 1/8" - 1.5", mainly 1/8-1/2", subround, poorly sorted, medium plasticity, rapid dilatany, wet, medium dense, very soft (HP = <0.5), no odor, yellow brown (10 YR 5/4). 20-22'/				3.4						
6	12	13 35 10-1"	22	20-20.9' Sand: Sand is very fine to medium, mainly very fine to fine, subangular to subround, some				3.4						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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Boring Number MP-13

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			24	silt, little clay, trace to little gravel, 1/8" - 1.5", mainly 1/8-1/2", subround, poorly sorted, medium plasticity, rapid dilatany, wet, medium dense, very soft (HP = <0.5), no odor, yellow brown (10 YR 5/4).										
7	12	17 35 41-5"		22-24'/ 22-23.1' Sand: Sand is very fine to medium, mainly very fine to fine, subangular to subround, some silt, little clay, trace to little gravel, 1/8" - 1.5", mainly 1/8-1/2", subround, poorly sorted, medium plasticity, rapid dilatany, wet, medium dense, very soft (HP = <0.5), no odor, yellow brown (10 YR 5/4). Note: Sand becoming coarser, large sandstone and dolomite fragments at 22.2-22.6'.				4.4						
8	13.2	28 30 20-3"	26	24-26'/ 24-25' Sand: Sand is fine to coarse, mainly fine to medium, subangular to subround, some silt, trace clay, little gravel, 1/8-1/4", subround, poorly sorted, low to no plasticity, rapid dilatancy, wet, medium dense, medium stiff (HP = 2.0), no odor, yellow brown (10 YR 5/4).				6.9						
9	4.8	53-4"	28	26-28'/ 26-27.1' Sand: Sand is fine to coarse, mainly fine to medium, subangular to subround, some silt, trace clay, little gravel, 1/8-1/4", subround, poorly sorted, low to no plasticity, rapid dilatancy, wet, medium dense, medium stiff (HP = 2.0), no odor, yellow brown (10 YR 5/4).				3.1						
			30	28-30'/ 28-28.4' Crushed rock fragments of glauconitic sandstone.										
			32	End of Logging @ 30.0' Bedrock @ 31.0' EOB @ 200.0'										
			34											
			36											
			38											
			40											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/201 Waubesa/WI001283.0009.00003		MP-14

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	09/25/12	10/22/12	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8" to 37' 6" to 200' inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ ☐E ☐W Lat _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____ Long _____

Local Grid Location ☐N ☐E
_____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/(City)/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-18'/ Blind drill.										
			14											
			16											
			18											
2	22.8	6 3 8 6		18-20'/ Sand: Sand is very fine to medium, mainly very fine to fine, subangular to subround, some silt, trace clay, trace to little gravel, 1/8"-1", mainly 1/8-1/4", subround, poorly sorted, wet, rapid dilatancy, soft (HP = 0.5), low plasticity, no odor, yellowish brown (10 YR 5/4).				0.6						
			20											
3	14.4	6 4 5 8		20-22'/ Sand: Sand is very fine to medium, mainly very fine to fine, subangular to subround, some silt, little clay, trace gravel, 1/8"-1", mainly 1/8-1/4", sub-round, poorly sorted, crushed black rock fragments at 20.4', wet, rapid dilatancy, soft (HP = 0.5), low plasticity, no odor, yellowish brown (10 YR 5/4).				0.5						
			22											
4	10.8	11 20 34 8-1'						0.2						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Bya Todd Schmelfeldt

Firm: ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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madison-kipp/WI001283/graphics/logs/mp14.ai

Boring Number MP-14

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			24	22-24'/ Sand: Sand is very fine to coarse, mainly fine to medium, subangular to subround, little silt, little gravel, grannule to large pebble, mainly small pebble, subangular to subround, trace clay, poorly sorted, wet, rapid diliatancy, loose, no odor, low plasticity, yellowish brown (10 YR 5/4).										
5	8.4	37 16						1.3						
			26	24-26'/ Sand: Sand is very fine to coarse, mainly fine to medium, subangular to subround, little silt, little gravel, grannule to large pebble, mainly small pebble, large dolostone fragments at 0.2-0.6", wet, rapid dilatancy, loose, no odor, low plasticity, yellowish brown (10 YR 5/4).										
6		11 46 8-1"						0.6						
			28	26-28'/ Sand: Sand is very fine to coarse, mainly fine to medium, subangular to subround, little silt, some gravel, grannule to large pebble, mainly small pebble, wet, rapid dilatancy, loose, no odor, low plasticity, yellowish brown (10 YR 5/4).										
7								--						
			30	28-30'/ No recovery. 30-200' Blind drill.										
				End of Logging @ 30.0' Bedrock @ 44.0' EOB @ 200.0'										
			32											
			34											
			36											
			38											
			40											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/201 Waubesa/WI001283.0009.00003		MP-15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	11/9/2012	12/11/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8" to 41' 6" to 200' inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ Long _____

Local Grid Location ☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-10'/ Blind drill.										
2	16.8	23 20 16 27	10	10-12'/ 0-0.9' Sand: Very fine to fine, subangular to subround, some silt, trace to little clay, moderate to poor sorting, medium dense to loose, wet, no odor, low plasticity, yellowish brown (10 YR 5/8). 0.9-1.4' Silt: Little clay, trace sand, very fine to subangular to subround, trace gravel, 1/8-1/4", angular to poorly sorted, medium to high plasticity, rapid dilatancy, no odor, very dark yellowish brown (10 YR 4/4).				0.0						
3	15.6	6 5 6 7	12	12-14'/ 0-1.3' Sand; Fine to medium mostly fine, subangular to subround, little gravel, 1/8-1", subangular to subround, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).				0.8						
4	10.8	20 22 17 13	14	14-16'/ 0-1.2' Sand; Fine to medium mostly fine, subangular to subround, little gravel, 1/8-1", subangular to subround, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, yellowish brown (10 YR 5/4).				0.9						
5	4.8	10 17 18 17	16	16-18'/ 0-0.4' Sand; Fine to medium mostly fine, subangular to subround, little gravel, 1/8-1", subangular to fractured, mostly 1/4-1/2", little silt, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).				0.0						
6	14.4	14 13 12 20	18					0.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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Boring Number MP-15

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			20	18-20'/ 0-1.2' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).										
7	16.8	16 22 23 36	22	20-22'/ 0-1.4' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).				0						
8	16.8	21 22 35 50	24	22-24'/ 0-1.4' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).				0.4						
9	10.8	40 22 23	26	24-26'/ 0-0.9' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).				0.2						
10	14.4	48 25 25 17	28	26-28'/ 0-1.2' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, brown (10 YR 4/3).				0.8						
11	14.4	9 10 10 9	30	28-30'/ 0-1.2' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, light yellowish brown (10 YR 6/4).				1.0						
12	14.4	28 23 22 25	32	30-32'/ 0-1.2' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, poorly sorted, wet, rapid dilatancy, loose, no odor, light yellowish brown (10 YR 6/4).				1.0						
13	16.8	14 19 15 20	34	32-34'/ 0-1.4' Sand: Fine to medium mostly fine, sub-angular to subround, little gravel, 1/8-1", sub-angular to fractured, mostly 1/4-1/2", little silt and clay, clay lenses 1/4-3/4" thick at 0.6-0.9', poorly sorted, wet, rapid dilatancy, loose, no odor, light yellowish brown (10 YR 6/4).				1.6						
			36	EOB @ 34.0 34-200' Blind drill										

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/201 Waubesa/WI001283.0009.00003		MP-16

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/R Last Name Schmelfeldt/Larsen Firm Boart Longyear	11/8/2012	11/30/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8" to 51' 6" to 200' inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N,R _____ Long _____
Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-28'/ Blind drill.										
2	9.6	35 50/2"	28	28-30'/ 0-0.8' Sand: Very fine to fine, mostly fine, subangular to subround, little silt, little gravel, 1/8-1", mostly 1/2", subangular to subround, mostly subround, poorly sorted, wet, rapid dilatancy, no to low plasticity, medium stiff (HP = 2.25), no odor, brownish yellow (10 YR 6/6).				0.0						
3	10.8	18 39 50/4"	30	30-32'/ 0-0.8' Sand: Very fine to fine, mostly fine, subangular to subround, little silt, some gravel, 3/4-1", angular to fractured, mostly subround, poorly sorted, wet, rapid dilatancy, no to low plasticity, medium stiff (HP = 2.25), no odor, brownish yellow (10 YR 6/6).				0.0						
4	9.6	20 37 50/4"	32	32-34'/ 0-0.8' Sand: Fine to medium, subangular to subround, little clay, little silt, little gravel, 1/8-1", mostly 1/2", subangular to subround, mostly subround, poorly sorted, saturated, rapid dilatancy, low to medium plasticity, medium stiff (HP = 2.25), no odor, brownish yellow (10 YR 6/6).				0.0						
5	12	14 28 38 50/ 3"	34	34-36'/ 0-1.0' Sand: Very fine to medium, mostly fine, subangular to subround, some silt, little to some gravel, 1/4-2" angular to fractured, trace clay, poorly sorted, wet, rapid dilatancy, low plasticity, medium stiff (HP = 2.5), no odor, brownish yellow (10 YR 6/6).				0.0						
6	15.6	30 31 31	36					0.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Bryan Rudd Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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Boring Number MP-16

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			38	36-38'/ 0-1.3' Sand: Very fine to medium, fine, subangular to subround, some silt, little to some grave, 1/4-2", angular to fractured, trace clay, poorly sorted, wet, rapid dilatancy, low plasticity, medium stiff (HP = 2.5), no odor, brownish yellow (10 YR 6/6).										
7	14.4	50 50 16/2"		38-40'/ 0-1.2' Sand: Very fine to medium, fine, sub-angular to subround, some silt, little to some gravel, 1/4-2", angular to fractured, trace clay, poorly sorted, wet, rapid dilatancy, low plasticity, medium stiff (HP = 2.5), no odor, brownish yellow (10 YR 6/6).				0.0						
8	10.8	37 23 18	40	40-42'/ 0-0.9' Sand: Very fine to medium, fine, subangular to subround, some silt, little to some grave, 1/4-2", angular to fractured, trace clay, poorly sorted, wet, rapid dilatancy, low plasticity, medium stiff (HP = 2.5), no odor, brownish yellow (10 YR 6/6).				0.0						
9	21.6	36 34 50	42	42-44'/ 0-1.5' Sand: Very fine to medium, fine, subangular to subround, some silt, little to some grave, 1/4-2", angular to fractured, trace clay, poorly sorted, laminated silt layers throughout, wet, rapid dilatancy, low plasticity, medium stiff (HP = 2.5), no odor, brownish yellow (10 YR 6/6). 1.5-1.8' Sand: Fine to medium, subangular to subround, little to trace silt, trace gravel, 1/8-1/4" subround, poorly sorted, wet, rapid dilatancy, low plasticity, soft (HP = 1.0), no odor, laminated beds of glauconitic sand, olive (5/4 R 4/4).				0.0						
10	20.4	7 31 53	44					0.9						
11			46	44-46'/ 0-0.8' Sand: Very fine to medium, fine, subangular to subround, some silt, little to some grave, 1/4-2", angular to fractured, trace clay, poorly sorted, iron staining throughout, wet, rapid dilatancy, low plasticity, medium stiff (HP = 2.5), no odor, brownish yellow (10 YR 6/6). 0.8-1.7' Sand: Very fine to fine, subangluar to subround, trace silt, wellsorted, wet, nonplastic, rapid dilatancy, loose, no odor, iron staining, very pale brown (10 YR 8/4).										
			48											
			50	EOB @ 46 46-200' Blind drill										
			52											
			54											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/201 Waubesa/WI001283.0009.00003		MW-17

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	10/10/2012	11/08/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8" to 37' 6" to 207' inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ Long _____

Local Grid Location
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-207'/ Blind drill.										
			207	Bedrock @ 32.0'										
			30											
			32											
			34											
			36											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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madison-kipp/WI001283/graphics/logs/mw17.ai

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0010.00002		MW-18S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering	11/02/2012	11/02/2012	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-18S	_____ Feet	867.89 Feet MSL	8 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 400104.77 N, 2144064.81 E S☐/C☐/N☐ E☐ W☐
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____
Lat _____ Long _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-30.5'/ Blind drill.										
			30.5	Bedrock @ 30.5'										
			32											
			34											
			36											
			38											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Bryan Rud Firm ARCADIS 126 N. Jefferson St., Suite 400 Milwaukee, WI (414) 276-7742

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0010.00002		MW-19D/19D2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	10/23/2012	10/24/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-19D/19D2	_____ Feet	867.443 Feet MSL	10" to 35' 8" to 142' inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400150.88 N, 2144078.21 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ Long _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-142'/ Blind drill.										
			142	Bedrock @ 27.0'										
			144											
			146											
			148											
			150											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Bya Schmelfeldt

Firm: ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0010.00002		MW-20D/20D2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	10/24/2012	10/25/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-20D/20D2	_____ Feet	867.362 Feet MSL	10" to 35' 8" to 142' inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400140.3 N, 2144077.85 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____ Long _____

Local Grid Location
☐N ☐E
_____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-142'/ Blind drill.										
			142	Bedrock @ 28.0'										
			144											
			146											
			148											
			150											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0010.00002		MW-21D/21D2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	10/25/2012	10/26/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-21D/21D2	_____ Feet	867.77 Feet MSL	10" to 35' 8" to 172' inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400111.07 N, 2144075.75 E S☐/C☐/N☐ E☐ W☐ Lat _____ Long _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-172'/ Blind drill.										
			172	Bedrock @ 28.0'										
			174											
			176											
			178											
			180											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Bryan Schmelfeldt

Firm: ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any purpose. NOTE: See instructions for more information, including where the completed from should be sent.

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0009.00009		MW-22S/22D

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Randy/Todd Last Name Radke/Schmelfeldt Firm Boart Longyear	01/04/13	01/04/13	Mini Sonic

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-22S/22D	_____ Feet	874.45 Feet MSL	8.0 inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 399769.22 N, 2144125.28 E S☐/C☐/N☐ E☐ W☐ Lat _____ Long _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____
Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	36		0	0-4.0'/ 0.0-0.7' Concrete: 8" thick-16" borehole through floor. 0.7-3.4' Pulverized dolostone. 3.4-4.0' Clay: Little silt, trace very fine sand, trace gravel, 1/8", subangular to subround, moist, high plasticity, soft, strong odor, black and green streaks, dark greenish gray (Gley 4/1).	Fill GW CH			0-2 23.5 2-4 60.4						
2	60		4	4.0-9.0'/ 4.0-6.6' Clay: Little silt, trace very fine sand, trace gravel, 1/8", subangular to subround, moist, high plasticity, soft, strong odor, black and green streaks, dark greenish gray (Gley 4/1). Note: Trace 1/8-1" pieces of crumbly vesicular slag through. 6.6-7.4' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, little gravel, 1/8-1", mainly 1/8-1/2", subangular to sub-round, poorly sorted, dry to moist, loose, strong odor, black streaks and 1/8-1" pieces of crumbly slag through out, yellowish brown (10 YR 5/8). 7.4-8.4' Clay: Little silt, trace very fine sand, trace gravel, 1/8", subangular to subround, moist, high plasticity, soft, strong odor, black and green streaks, dark greenish gray (Gley 4/1). Note: Trace 1/8-1" pieces of crumbly vesicular slag through. 8.4-9.0' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, little gravel, 1/8-1", mainly 1/8-1/2", subangular to sub-	CH SW CH SW CH GW			4-6 13.2 6-8 33.4 8-9 22.1 9-10 19.8 10-12 17.2						
3	60		6 8 10											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any purpose. NOTE: See instructions for more information, including where the completed from should be sent.

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				round, poorly sorted, dry to moist, loose, strong odor, black streaks and 1/8-1" pieces of crumbly slag throughout, yellowish brown (10 YR 5/8).	SW			12-14 12.8						
				9.0-14'/ 9.0-9.6' Clay: Little silt, trace very fine sand, trace gravel, 1/8", subangular to subround, moist, high plasticity, soft, strong odor, black and green streaks, dark greenish gray (Gley 4/1). 9.6-10.5' Pulverized Dolostone. 10.5-10.9' Sand: Very fine to medium grained, mainly very fine to fine, subangular to subround,	SW MH SW									
4	60		12 14 16 18	little silt, little gravel, 1/8-1/2", angular, trace organics (roots and wood pieces), poorly sorted, moist, loose, slight odor, dark yellowish brown (10 YR 4/4). 10.9-12.3' Sand: Very fine to medium grained, mainly very fine to fine, subangular to subround littel silt, little to some gravel, 1/8-3", mainly 1/8-3/4", subangular to subround, poorly sorted, loose dry, no odor, yellowish brown (10 YR 5/8). 12.3-12.9' Silt: Some very fine to fine grained sand, subangular to subround, little clay, trace gravel, 1/8", subangular to subround, low to medium plasticity, moist to dry, soft, slight odor, dark grayish brown (10 YR 4/2). 12.9-14.0' Sand: Very fine to medium grained, mainly very fine to fine, subangular to subround littel silt, little to some gravel, 1/8-3", mainly 1/8-3/4", subangular to subround, poorly sorted, loose dry, no odor, yellowish brown (10 YR 5/8).	ML			14-16 17.5 16-18 11.4 18-19 4.0						
5	60		20 22 24	14-19'/ 14-19' Silt: Little clay, some sand, very fine to fine, subangular to subround, little gravel, 1/8-4", mainly 1/8-3/4", subangular to subround, trace organic carbon, silt partings throughout, low to medium plasticity, moist, medium stiff to stiff, no odor, yellowish brown (10 YR 5/4). 19-24'/ 19-20.4' Silt: Little clay, some sand, very fine to fine, subangular to subround, little gravel, 1/8-4", mainly 1/8-3/4", subangular to subround, trace organic carbon, silt partings throughout, low to medium plasticity, moist, medium stiff to stiff, no odor, yellowish brown (10 YR 5/4). 20.4-22.1' Silt: Some gravel, 1/8-4", mainly 1/8-1/2", subangular to subround, little very fine to fine sand, low plasticity, dry, loose, very pale brown (10 YR 7/4).	ML ML MH			19-20 7.8 20-22 5.0 22-24 2.5						
6	60		26 28	22.1-24' Silt: Little clay, little very fine sand, trace gravel, 1/8", subangular to subround, medium plasticity, moist, soft, no odor, brownish yellow (10 YR 6/6). 24-29'/ 24-29' Silt: Little clay, little sand, very fine to fine grained, subangular to subround, some gravel, 1/8-3", mainly 1/8-1/2", subangular to subround, low plasticity, moist, hard (HP >5.0), no odor, brownish yellow (10 YR 6/6).	ML			24-26 6.4 26-28 17.4 28-29 15.6						

Boring Number MW-22S/22D

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
7	60		30	29-34'/ 29-30.8' Silt: Little clay, little sand, very fine to fine grained, subangular to subround, some gravel, 1/8-3", mainly 1/8-1/2", subangular to subround, low plasticity, moist, hard (HP >5.0), no odor, brownish yellow (10 YR 6/6). Note: Wet at 30'. 30.8-32.4' Sand: Very fine to medium grained, mainly very fine to fine, subangular to subround, little to some silt, little gravel, 1/8-2", mainly 1/8-3/4", subangular to subround, poorly sorted, wet, loose, no odor, light yellowish brown (10 YR 6/4).	ML SW			29-30 6.9 30-32 0.9						
			32	32.4-33.0' Silt: Little clay, little sand, very fine to fine grained, subangular to subround, some gravel, 1/8-3", mainly 1/8-1/2", subangular to subround, low plasticity, moist, hard (HP >5.0), no odor, brownish yellow (10 YR 6/6). 33.0-34.0' Sand: Very fine to medium grained, mainly very fine to fine, subangular to subround, little to some silt, little gravel, 1/8-3", mainly 1/8-3/4", subangular to subround, trace clay, poorly sorted, wet, loose, no odor, light yellowish brown (10 YR 6/4).	ML SW			32-34 5.0						
8	48		34	34-39'/ 34.0-36.5' Sand: Very fine to medium grained, mainly very fine to fine, subangular to subround, little to some silt, little gravel, 1/8-3", mainly 1/8-3/4", subangular to subround, trace clay, poorly sorted, wet, loose, no odor, light yellowish brown (10 YR 6/4). 36.5-38' Weathered bedrock. 38.0-50.0' Blind drill.	SW GW			34-36 20.8 36-38 15.7						
			36											
			38	End of Logging @ 38' Bedrock @ 36.5 EOB @ 50'										
			40											
			42											
			44											
			46											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information
Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0009.00009		MW-23S/23D

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Randy/Todd Last Name Radke/Schmelfeldt Firm Boart Longyear	01/02/13	01/03/13	Minisonic

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-23S/23D	______ Feet	874.55 Feet MSL	8.0 inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 399647.46 N, 2144053.72 E S☐/C☐/N☐ Lat ______
____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ ☐ E ☐ W Long ______

Local Grid Location
______ Feet ☐ N ☐ S ______ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	51.6		0	0-5.0'/ 0.0-0.7' Concrete: 8" thick-14" borehole through floor.	Fill			0-2 1.1						
				0.7-2.0' Silt: Little clay, trace very fine sand, trace organic carbon, trace gravel, 1/16-1/8", angular, medium plasticity, moist, hard (HP >5.0), no odor, dark yellowish brown (10 YR 4/4).	MH									
			2	2.0-4.0' Silt: Little clay, little to some sand, very fine to fine grained, little gravel, 1/8-2", mainly 1/8-1/4", angular, silt partings throughout, abundant very fine euhedral pyrite throughout, medium plasticity, moist, soft (HP = 1.5), no odor, dark yellowish brown (10 YR 4/4).	MH			2-4 1.1						
			4	4.0-5.0' Silt: Little clay, little to some sand, very fine to fine grained, little gravel, 1/8-2", mainly 1/8-1/4", angular, silt partings throughout, abundant very fine euhedral pyrite throughout, medium plasticity, moist, soft (HP = 1.5), no odor, dark yellowish brown (10 YR 4/4).	MH			4-6 2.0						
2	48			5.0-9.0'/ 5.0-6.0' Silt: Little clay, little to some sand, very fine to fine grained, little gravel, 1/8-2", mainly 1/8-1/4", angular, silt partings throughout, abundant very fine euhedral pyrite throughout, abundant 1/16" angular gravel fill throughout, loose, 1" angular aluminum flakes, medium plasticity, moist, soft (HP = 1.5), no odor, dark yellowish brown (10 YR 4/4).	MH									
			6	6.0-9.0' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, trace to little gravel, 1/8-3-1/4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8).	SW			6-8 1.8						
			8					8-10 1.7						
3	36				SW									
			10	9.0-12'/ 9.0-9.8' Sand: Very fine to medium grained, mainly	CL GW			10-12 5.5						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	very fine, subangular to subround, little silt, trace to little gravel, 1/8-3-1/4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8).	SW SW									
4	60			9.8-9.9' Clay: Little silt, trace very fine to fine grained sand, trace 1/8" gravel, subangular, low plasticity, moist, hard, no odor, very dark grayish brown (10 YR 3/2). 9.9-10.2' Pulverized dolostone. 10.2-10.9' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, trace to little gravel 1/8-4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8).	SW GW SW			12-14 1.3						
			14											
5	60			10.9-12.' Sand: Very fine to medium grained, mainly very fine subangular to subround, little silt, little to some gravel 1/8-4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, light yellowish brown (10 YR 6/4) from 10.9-11.2' and brownish yellow (10 YR 6/8) from 11.2-12.0'.	SW			14-16 1.6						
			16					16-18 0.8						
			18	12-14'/ 12-12.7' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, little to some gravel 1/8-4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8). 12.7-13.6' Pulverized Dolostone.				18-19 1.6						
6	24			13.6-14' Sand: Very fine to medium grained, mainly very fine subangular to subround, little silt, little to some gravel 1/8-4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8).	SW ML			19-20 3.3 20-22 4.8						
			20											
			22	14-19'/ 14-19' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, some gravel, 1/8-4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8).				22-24 5.6						
			24	19-24'/ 19-19.8' Sand: Very fine to medium grained, mainly very fine, subangular to subround, little silt, some gravel, 1/8-4", mainly 1/8-3/4", subangular to subround, poorly sorted, dry, loose, no odor, yellowish brown (10 YR 5/8).										
7	60			19.8-24' Silt: Little clay, little sand, very fine to fine, subangular to subround, little gravel, 1/8-2", mainly 1/8-1/2", subangular to subround, silt partings throughout, low plasticity, moist, hard (HP >5.0), no odor, brownish yellow (10 YR 6/6).	ML MH ML			24-26 11.2						
			26	24-26'/										
8	48			24-24.9' Silt: Little clay, some sand, very fine to fine grained, subangular to subround, little gravel, 1/8-3", mainly 1/4-3/4", subangular to subround, low to medium plasticity, moist, stiff, no odor, brownish yellow (10 YR 6/6). 24.9-25.3' Silt: Some sand, very fine grained, trace gravel, 1/8-1/4", subround, medium plasticity, moist, very soft, no odor, brownish yellow (10 YR 6/6). 25.3-26' Silt: Little clay, some sand, very fine to	ML			26-28 5.8						
			28					28-30 4.2						

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			30	fine grained, subangular to subround, little gravel, 1/8-3", mainly 1/4-3/4", subangular to subround, low to medium plasticity, moist, stiff, no odor, brownish yellow (10 YR 6/6).	ML									
				26-31'/ 26.0-31.0' Silt: Little clay, some sand, very fine to fine grained, subangular to subround, little gravel, 1/8-3", mainly 1/4-3/4", subangular to subround, low to medium plasticity, moist, stiff, no odor, brownish yellow (10 YR 6/6). Note: Wet at 30'.				30-31 1.8						
8	48		32	31-35'/ 31.0-35.0' Sand: Fine to medium grained, sub-angular to suborund, little silt, little gravel, 1/8-3", mainly 1/4-3/4", subangular to subround, trace clay, poorly sorted, wet, medium dense, no odor, dark yellowish brown (10 YR 4/6).	SW			31-33 6.4 33-35 2.1						
9	24		36	35-37'/ 35.0-36.0' Sand: Fine to medium grained, sub-angular to suborund, little silt, some gravel with weathered bedrock, 1/8-3", mainly 1/4-3/4", sub-angular to subround, trace clay, poorly sorted, wet, medium dense, no odor, dark yellowish brown (10 YR 4/6). 36.0-37.0' Weathered and fractured bedrock. 37.0-50.0' Blind drill.	SW GW			35-37 14.9						
			38											
			40	End of Logging @ 37' Bedrock @ 36.0 EOB @ 50'										
			42											
			44											
			46											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Route To:
- ☐ Solid Waste
- ☐ Wastewater
- ☐ Emergency Response
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp Corporation		MW-24

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started (MM/DD/YY)	Date Drilling Completed (MM/DD/YY)	Drilling Method
Alex Plummer – Badger State Drilling	03 / 28 / 13	03 / 28 / 13	Hollow stem auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	8 inches

Boring Location
State Plane _____ N. _____ E S/C/N
SW 1/4 of SW 1/4 of Section 5 T 7 N, R 10 E

Lat — — —
Long — — —

Local Grid Location (If Applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town / City / or Village
Dane	1 3	City of Madison

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/Comments
			0	Fill GRAVEL, brown, some sand	GP									
	4	30	4	Same	GP									
	16	10	6	SAND, fine-grained, brown	SM									
			7	SILT, clayey, dark brown	ML									
	8	>100	8	Same										
	0	>100	10											
	16	29	12	SAND, fine- to medium-grained, some silt, brown										
			14											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Robert J. Lauter Firm RJN Environmental Services, LLC, Oregon, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $4,000 for each violation. Fines not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-24

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
	8	64	15	Same	SM									
	17	41	16	Same, some sandstone chips	SM									
	21	43	18	Same	SM									
	14	>100	20	Same	SM									
	0	>100	22											
	0	>100	24	Bedrock drilling										
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-24

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			37											
			38											
			39	Bedrock drilling										
			40											
			41											
			42											
			43	End of boring at 43 feet										
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											
			53											
			54											
			55											
			56											
			57											
			58											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp Corporation		MW-25D

Boring Drilled By:	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Todd Last Name: Schmelfeldt Firm: Boart Longyear	4/4/2013	4/19/2013	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VN190		MW-25D	845.43 Feet MSL	886.97 Feet MSL	12" to 53', 8" to 230'

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒

State Plane 398730.9 N 2144829.8 E Lat

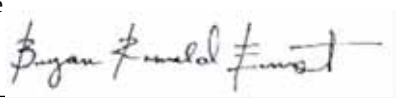
1/4 1/4 of Section , T N, R Long

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Soil Properties: Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.0	0.0 - 42.0' BLIND DRILL: Unconsolidated Soil										
			20.0											
			40.0	42.0 - 53.0' BLIND DRILL: Weathered bedrock										
			60.0	53.0 - 230.0' BLIND DRILL: Bedrock										
			80.0											
			100.0											
			120.0	End of boring at 230.0' bgs.										
			140.0											
			160.0											
			180.0											
			200.0											
			220.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI 53202 (414) 276-7742

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp Corporation		MW-25D2

Boring Drilled By:	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Todd Last Name: Schmelfeldt Firm: Boart Longyear	4/4/2013	4/19/2013	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VN191		MW-25D2	845.32 Feet MSL	886.97 Feet MSL	12" to 53', 8" to 230'

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒

State Plane 398730.9 N 2144829.8 E Lat

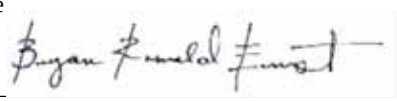
1/4 1/4 of Section , T N, R Long

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Soil Properties: Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.0	0.0 - 42.0' BLIND DRILL: Unconsolidated Soil										
			20.0											
			40.0	42.0 - 53.0' BLIND DRILL: Weathered bedrock										
			60.0	53.0 - 230.0' BLIND DRILL: Bedrock										
			80.0											
			100.0											
			120.0	End of boring at 230.0' bgs.										
			140.0											
			160.0											
			180.0											
			200.0											
			220.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001368.0004.00001		MW-26S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Ryan Last Name Fett Firm Giles Engineering	08/21/12	08/21/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
PM697		MW-26S	6.49 Feet	857.51 Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 400493.61 N, 2144047.26 E S☐/C☐/N☐ E☐ W☐ Lat _____ Long _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____

Local Grid Location ☐N ☐E
_____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Aft. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	14.4	4 6 16 6	0	0-2'/ 0-1.5' Silt: Some clay; some sand; low plasticity; slow dilatancy; dry; stiff (HP = 1.6); brown (7.5 YR 4/3); no odor. 1.5-2.0' Silt: Medium plasticity; and sand, sub-rounded, fine to medium, mostly fine; little gravel, up to 1/2", subangular; slow dilatancy; low				37						
2	15.6	3 3 5 5	2	plasticity; dry; soft (HP = 0.5)' light brown (7.5 YR 6/4); no odor. 2-4'/ Clay: Medium plasticity; and silt; trace sand, fine, subrounded; no dilatancy; moist; stiff (HP = 2.0); brown (7.5 YR 5/3); no odor; orange mottling				38.2						
3	24	6 7 9 8	4	increasing with depth. 4-6'/ 4.0-4.9' Sand: Subrounded, fine to very fine, mostly fine; little silt; little clay, moist; medium density; poorly sorted; reddish yellow (7.5 YR 6/8); no odor; red to orange mottling present in clay lenses from 4.5-4.6' and 4.7-4.8'.				15.9						
4	18	3 4 5 7	6	4.9-6.0' Sand: Rounded to subrounded, fine; trace silt; trace clay; well sorted; moist; loose; strong brown (7.5 YR 5/6); no odor. 6-8'/ 6.0-7.5' Sand: Rounded, very fine; some clay; trace silt; poorly sorted; moist; soft/medium dense;				43.9						
5	19.2	3 4 4 6 8.8▼	8	brown (7.5 YR 5/4), no odor, clay lense from 6.7-6.8'. 7.5-8.0' Sand: Subrounded, medium; little clay; trace gravel, up to 1/2", subrounded; poorly sorted; moist; loose; strong brown (7.5 YR 5/6); no odor; trace 1/4" black glassy gravel. 8-10'/ 8.0-8.9' Sand: Rounded, very fine; some clay; little				29						
6	14.4	1 3 2 2	10	silt; poorly sorted; wet; medium dense; strong brown (7.5 YR 5/6); no odor; black clay lamination				32.5						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Dan Kk

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126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			12	in 2 mm lenses throughout. 8.9-10' Sand: Subrounded, fine; trace clay; trace silt; trace gravel, subrounded, up to 1/4"; poorly sorted; wet; loose; light brown (7.5 YR 6/4); no odor.										
7	16.8	1 1 2 1		10-15.3'/ 10-15.3' Sand: Subrounded, fine to medium, mostly fine; trace clay; trace silt; trace gravel, up to 1/2", subangualr, moderate cementation, sandstone; poorly sorted; wet; loose; white (7.5 YR 8/1); no odor.				2.1						
8	20.4	1 2 2 3	14					3.5						
				15.3-16'/ Sand: Rounded, very fine; little clay; little silt; trace gravel up to 1", angular; poorly sorted; loose; dark gray (7.5 YR 4/1); no odor.										
9	21.6	11 23 30 28	16	16-18'/ 16-16.3' Sand: Rounded, very fine; little clay; little silt; trace gravel, up to 1", angular; poorly sorted; loose; dark gray (7.5 YR 4/1); no odor. 16.3-16.7' Sand: Rounded, fine; little clay; trace silt; poorly sorted; wet; loose; light brown (7.5 YR 6/4); no odor; 2" angular sandstone sheered into splitspoon core.				2.1						
			18	16.7-17.2' Sand: Subrounded, medium; trace clay; trace silt; little gravel, up to 1", angular, moderate cementation, sandstone; poorly sorted; wet; loose; light brown (7.5 YR 6/4); no odor; sandstone gravel red to yellow (7.5 YR6/8). 17.2-18' Sand: Subrounded, fine; little clay; trace silt; trace gravel, up to 1/4", angular, sandstone, white (7.5 YR 1/1); poorly sorted; wet; loose; brown (7.5 YR 4/2); no odor; coarse, subangular, sand from 17.6 to 17.7', olive (5 Y 4/3) and black (7.5 YR 2.5/1).										
			22	EOB @ 18.0'										
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001368.0004.00001		MW-27D

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd Last Name Schmalfeldt Firm Cascade Drilling	11/18/2013	12/03/2013	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VN147		MW-27D	_____ Feet	862.96 Feet MSL	8 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 401658.63 N, 2143889.24 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____ Long _____

Local Grid Location
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Aft. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	13.2	2 3 4 4	0	0-2′/ 0-0.8′ Silt: High plasticity, no dilatancy; some clay; trace sand; moist; soft, HP = 1.5; brown (7.5 YR 4/2); no odor; no staining. 0.8-1.5′ Clay: Medium plasticity, no dilatancy; some silt; dry; very stiff, HP = 4.5; light brown (7.5 YR 6/4); no odor; no staining; orange mottling throughout. 1.5-2.0′ Silt: Low plasticity, slow dilatancy; some clay; trace gravel, 1/8-1/2″, subrounded; dry; soft, HP = 0.5; brown (7.5 YR 5/4); no odor; no staining.				0.0							140 pound hammer
2	7.2	10 30 35 20	2	2-4′/ 2.0-3.0′ Silt: Low plasticity, slow dilantancy; some clay; dry; soft, HP = 0.5; brown (7.5 YR 5/4); no odor; no staining. 3.0-4.0′ Gravel: Subangular, 1/4-1″ some clay; little silt; poorly sorted; dry; very loose; very pale brown (10 YR 8/2); gravel is sandstone, strong cementation; clay is yellowish-red (5 YR 4/6); no odor; no staining.				0.0						
3	7.2	35 15 14 12	4					0.1						300 pound hammer
4	15.6	4 4 4 7	6	4-6′/ 4.0-6.0′ Clay: Medium plasticity, no dilatancy; some silt; some gravel; angular, 1/8-1/4″; dry; soft, HP = 0.75; brown (7.5 YR 4/4); no odor, no staining.				0.0						
5	20.4	4 3 3 4	8	6-8′/ 6.0-8.0′ Clay: Medium plasticity, no dilatancy; little silt; moist; medium stiff, HP = 2.0; light brown (7.5 YR 6/4); no odor; no staining; orange mottling throughout. 8-10′/ 8.0-10.0′ Clay: Medium plasticity, no dilatancy; some silt; moist; medium stiff, HP = 2.0; light brown (7.5 YR 6/4); no odor; no staining; yellowish red (5 YR 4/6) mottling from 8.7-9.1′.				0.0						
6	24	4 3 3 4	10					0.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Dail Kl

Firm ARCADIS
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Milwaukee, WI (414) 276-7742

Boring Number MW-27D

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	10-12′/ 10.0-12.0′ Clay: High plasticity, no dilatancy; and silt; moist; medium stiff, HP = 1.5; reddish yellow (7.5 YR 6/6); no odor; black staining from 10.4-10.8′; red-brown mottling from 10.4-11.4′.										
7	15.6	5 5 6 5	14	12-14′/ 12.0-12.8′ Clay: High plasticity, no dilatancy; some silt; some sand, medium, subrounded, red (2.5 YR 4/8); moist; medium stiff, HP = 1.5; reddish yellow (7.5 YR 6/6); sand increasing with depth. 12.8-14.0′ Sand: Subrounded, medium to coarse, mostly medium; trace clay; well sorted; moist; loose; yellowish red (5 YR 5/6); no odor; no staining; clay lens at 13.4-13.5′; more tan with depth.				2.1						
8	12	5 5 4 4	16	14-16′/ 14.0-16.0′ Sand: Subrounded, medium to coarse, mostly medium; well sorted; wet at 16′; loose; light yellowish brown (10 YR 6/4); no odor, no staining.				3.5						
9	12	6 6 9 14	18	16-18′/ 16.0-18.0′ Sand: Subrounded, medium to coarse, mostly medium; little clay; trace gravel, pebbles, subrounded; poorly sorted; wet; loose; light yellowish brown (10 YR 6/4); no staining.				2.1						
10			28	18-28′/ Weathered Bedrock (Blind Drilled).										
11			227	28-227′/ Competent Bedrock (Blind Drilled).										

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001368.0004.00001		MW-27D2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd Last Name Schmalfeldt Firm Cascade Drilling	11/18/2013	12/03/2013	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VN146		MW-27D2	_____ Feet	862.96 Feet MSL	8 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 401658.63 N, 2143889.24 E S☐/C☐/N☐ E☐ W☐
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____
Lat _____ Long _____

Local Grid Location
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Aft. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	13.2	2 3 4 4	0	0-2'/ 0-0.8' Silt: High plasticity, no dilatancy; some clay; trace sand; moist; soft, HP = 1.5; brown (7.5 YR 4/2); no odor; no staining. 0.8-1.5' Clay: Medium plasticity, no dilatancy; some silt; dry; very stiff, HP = 4.5; light brown (7.5 YR 6/4); no odor; no staining; orange mottling throughout. 1.5-2.0' Silt: Low plasticity, slow dilatancy; some clay; trace gravel, 1/8-1/2", subrounded; dry; soft, HP = 0.5; brown (7.5 YR 5/4); no odor; no staining.				0.0							140 pound hammer
2	7.2	10 30 35 20	2	2-4'/ 2.0-3.0' Silt: Low plasticity, slow dilantancy; some clay; dry; soft, HP = 0.5; brown (7.5 YR 5/4); no odor; no staining. 3.0-4.0' Gravel: Subangular, 1/4-1" some clay; little silt; poorly sorted; dry; very loose; very pale brown (10 YR 8/2); gravel is sandstone, strong cementation; clay is yellowish-red (5 YR 4/6); no odor; no staining.				0.0							
3	7.2	35 15 14 12	4	4-6'/ 4.0-6.0' Clay: Medium plasticity, no dilatancy; some silt; some gravel; angular, 1/8-1/4"; dry; soft, HP = 0.75; brown (7.5 YR 4/4); no odor, no staining.				0.1							300 pound hammer
4	15.6	4 4 4 7	6	6-8'/ 6.0-8.0' Clay: Medium plasticity, no dilatancy; little silt; moist; medium stiff, HP = 2.0; light brown (7.5 YR 6/4); no odor; no staining; orange mottling throughout.				0.0							
5	20.4	4 3 3 4	8	8-10'/ 8.0-10.0' Clay: Medium plasticity, no dilatancy; some silt; moist; medium stiff, HP = 2.0; light brown (7.5 YR 6/4); no odor; no staining; yellowish red (5 YR 4/6) mottling from 8.7-9.1'.				0.0							
6	24	4 3 3 4	10					0.0							

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dail Kl

Firm: ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Boring Number MW-27D2

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	10-12′/ 10.0-12.0′ Clay: High plasticity, no dilatancy; and silt; moist; medium stiff, HP = 1.5; reddish yellow (7.5 YR 6/6); no odor; black staining from 10.4-10.8′; red-brown mottling from 10.4-11.4′.										
7	15.6	5 5 6 5	14	12-14′/ 12.0-12.8′ Clay: High plasticity, no dilatancy; some silt; some sand, medium, subrounded, red (2.5 YR 4/8); moist; medium stiff, HP = 1.5; reddish yellow (7.5 YR 6/6); sand increasing with depth. 12.8-14.0′ Sand: Subrounded, medium to coarse, mostly medium; trace clay; well sorted; moist; loose; yellowish red (5 YR 5/6); no odor; no staining; clay lens at 13.4-13.5′; more tan with depth.				2.1						
8	12	5 5 4 4	16	14-16′/ 14.0-16.0′ Sand: Subrounded, medium to coarse, mostly medium; well sorted; wet at 16′; loose; light yellowish brown (10 YR 6/4); no odor, no staining.				3.5						
9	12	6 6 9 14	18	16-18′/ 16.0-18.0′ Sand: Subrounded, medium to coarse, mostly medium; little clay; trace gravel, pebbles, subrounded; poorly sorted; wet; loose; light yellowish brown (10 YR 6/4); no staining.				2.1						
10			28	18-28′/ Weathered Bedrock (Blind Drilled).										
11			227	28-227′/ Competent Bedrock (Blind Drilled).										

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp		B-202/MW-28

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Chip/Joel Last Name Firm Giles Engineering	03/04/15	03/04/15	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		SB-202/MW-28	_____ Feet	_____ Feet MSL	3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 399666.77 N, 2144113.37 E S☐/C☐/N☐ Lat _____
SW 1/4 of _____ 1/4 of Section 5 ,T 7 ☒N ☐S R 10 ☒E ☐W Long _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	Concrete.										
2	10.8			1-2'/ 0.0-0.2' Fill, Sand and Gravel. 0.2-0.9' Silty Clay: Stiff, low plasticity, dark reddish brown, dry.				0.2-0.9 1.1						
3	4.8		2	2-4'/ 2.0-2.4' Silty Clay: Stiff, low plasticity, dark reddish brown, dry, clay, some silt.				2-2.4 0.8						
4	24		4	4-6'/ 4.0-4.8' Silty Clay: Stiff, low plasticity, dark reddish brown, dry, clay, some silt, trace little sand. 4.8-6.0' Sand: Trace to little clay, trace intermixed clay nodules, very fine to fine, poorly sorted, loose to medium dense, reddish brown slightly moist.				4-5 0.8 5-6 0.7						
5	16.8		6	6-8'/ 6.0-7.0' Sand: Trace clay and gravel, trace inter-mixed clay nodules, very fine to fine, poorly sorted, loose to medium dense, reddish brown slightly moist. 7.0-7.4' Sand: Trace clay and gravel, trace inter-mixed clay nodules, very fine to fine, poorly sorted,				6-7.4 0.6						
6	16.8		8	loose to medium dense, reddish brown slightly moist, some black slag, rock fragments. 8-10'/ 8.0-9.4' Sand: Trace to little gravel, trace slag, loose, very fine to fine, poorly sorted, light yellowish brown, dry.				8-9.4 0.8						
7	7.2		10	10-12'/ 10.0-10.6' Sand: Trace to little gravel, trace slag,				10-11.9 1.9						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				loose, very fine to fine, poorly sorted, light yellowish brown, dry, trace gravel.										
			12											
8	10.8			12-14'/ 12.0-12.5' Fragmented rock, micseous limestone. 12.5-12.9' Sand: Little clay, trace gravel/rock fragments, very fine to fine, poorly sorted, loose to medium dense, light reddish brown, dry.				12-12.9 2.2						
			14											
9	16.8			14-16'/ 14.0-15.4' Sand: Little clay, trace gravel/rock fragments, very fine to fine, poorly sorted, loose to medium dense, light reddish brown, dry, large rock fragments 14-14.7'.				14-15.4 2.1						
			16											
10	22.8			16-18'/ 16.0-17.9' Sand: Little clay, trace gravel/rock fragments, very fine to fine, poorly sorted, loose to medium dense, light reddish brown, dry, large rock fragments 16.1-16.6' and 16.9-17.2'.				16-17 2.3 17-17.9 1.3						
			18											
11	--			18-20'/ No recovery.										
			20											
12	13.2			20-22'/ 20.0-21.1' Sand: Little rock fragments and gravel, trace clay, very fine to fine, poorly sorted, sub-rounded, loose to medium dense, light reddish brown, dry.				20-21.1 1.1						
			22											
13	13.2			22-24'/ 22.0-22.4' Rock Fragments. 22.4-23.1' Sand and Clay: Trace to little rock fragments, soft to medium stiff, no to low plasticity, clay content decreases with depth, light reddish brown, moist.				22-23.1 2.5						
			24											
14	22.8			24-26'/ 24.0-24.4' Rock Fragments. 24.4-25.4' Sand: Little silt, little rock fragments, medium dense, very fine to fine, poorly sorted, light reddish brown, dry to slightly moist.				24-25.4 2.1						
			26											
15	9.6			26-28'/ 26.0-26.8' Sand: Little silt, little rock fragments, medium dense, very fine to fine, poorly sorted, light reddish brown, dry to slightly moist, little clay, trace silt.				26-26.8 2.1						
			28											
16	8.4			28-30'/ 28.0-28.7' Sand: Little rock fragments/gravel, trace silt, loose, very fine, poorly sorted, light reddish				28-28.7 2.1						

Boring Number B-202/MW-28

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			30	brown, slightly moist to moist.										
17	--		32	30-32'/ No recovery.										
18	14.4		34	32-34'/ Refusal rock.										
			36											
			38											
			40											
			42											
			44											
			48											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp Corp	02-13-578014	MW-29S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Craig Plant Ground Source	1/16/2018	1/16/2018	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VS879		MW-29S	847.5 Feet MSL	876.0 Feet MSL	8.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane N, E S/C/N
SW 1/4 of SW 1/4 of Section 5, T 7 N, R 10 E
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	**Boring blind drilled to 35' bgs, see MW-29D log for lithology.**										
			2											
			4		CL									
			6											
					ML									
			8		CL									
			10											
			12											
			14		SP									
			16											
			18											
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	TRC Environmental Corporation 708 Heartland Trail Suite 3000 53717	608-826-3600 Fax: 608-238-7156

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-29S Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			22	**Boring blind drilled to 35' bgs, see MW-29D log for lithology.**	SP									
			24											
			26											
			28											
			30											
			32											
			34	Boring terminated at 35 feet bgs (1/16/2018).										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison Kipp Corp	02-13-578014	MW-29D

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Craig Plant Ground Source	1/15/2018	1/15/2018	rotary (air or mud)

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VS878		MW-29D	844.8 Feet MSL	875.9 Feet MSL	6.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane N, E S / C / N
SW 1/4 of SW 1/4 of Section 5, T 7 N, R 10 E
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	**TOPSOIL,** organic rich, black, no odor										
1 SS	24 24		2	**SILTY LEAN CLAY (CL),** slight plasticity, yellowish brown (10YR 5/6), no odor, dry going to moist at 3.5' bgs, stiff going to soft with depth.	CL			0.0	2					3-5
2 SS	24 24		4					0.0	1.25					5-7
			6	**SILT WITH SAND (ML),** fine grained, yellowish brown (10YR 5/8), no odor, dry, loose.	ML									
3 SS	24 24		8	**SILTY LEAN CLAY (CL),** slight plasticity, yellowish brown (10YR 5/6), no odor, moist, soft.	CL			0.0	1.25					7.5-9.5
				SAND WITH SILT (SP), fine grained, trace gravel, yellowish brown (10YR 5/6), no odor, dry, loose.										
4 SS	24 18		10					0.0						10-12
			12	sand with silt, same as above.										
5 SS	24 18		14		SP			0.0						12.5-14.5
6 SS	24 12		16					0.0						15-17
				sand with silt, same as above.										
7 SS	24 12		18					0.0						17.5-19.5
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	TRC Environmental Corporation 708 Heartland Trail Suite 3000 53717	608-826-3600 Fax: 608-238-7156

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-29D Use only as an attachment to Form 4400-122. Page 2 of 2

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
8 SS	24 6		22	**SAND WITH SILT (SP),** fine grained, trace gravel, yellowish brown (10YR 5/6), no odor, dry, loose.				0.0						20-22
			24	sand with silt, same as above, dolostone gravel becoming increasingly more present. Split spoon unable to be advanced due to formation stiffness. Drillers switch from 11.25" HSA to 6" air rotary due to difficult drilling conditions.	SP									
			26											
			28											
			30	**BEDROCK,** non-competent bedrock encountered at 29' bgs, drillers pull out and advance 11.25" HSA to 29' bgs to avoid boring blow out and collapse during air rotary. Cuttings recovered are fine sand and dolostone mixture.										
			32											
			34											
			36	bedrock, same as above.										
			38											
			40	**BEDROCK**, sandstone, drillers indicate bedrock has become more competent then 29-39' bgs.										
			42											
			44											
			46	bedrock, same as above.										
			48											
			50											
				Boring terminated at 50.5' bgs (1/15/2018).										

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0010.00002		IW-1S

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering	11/02/2012	11/02/2012	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		IW-1S	_____ Feet	867.82 Feet MSL	8 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 400117.03 N, 2144049.24 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ Long _____

Local Grid Location ☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-28'/ Blind drill.										
			28	Bedrock @ 28.0'										
			30											
			32											
			34											
			36											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Bryan Rudd Ernst

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0010.00002		IW-2D/2D2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd/Mark Last Name Schmelfeldt/Schultz Firm Boart Longyear	10/27/2012	10/28/2012	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		IW-2D/2D2	_____ Feet	867.57 Feet MSL	12"to 35' 10"to 142' inches

Local Grid Origin ☒ (estimated: ☐) or Boring Location ☐
State Plane 400131.34 N, 2144076.66 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____ Long _____

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-142'/ Blind drill.										
			142	Bedrock @ 27.0'										
			144											
			146											
			148											
			150											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS 126 N. Jefferson St., Suite 400 Milwaukee, WI (414) 276-7742

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any purpose. NOTE: See instructions for more information, including where the completed from should be sent.

madison-kipp/WI001283/graphics/logs/iw2d.ai

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE -2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/24/12	02/24/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ Lat _____
NW 1/4 of SW 1/4 of Section 5 ,T 7 N,R 10 ☒E ☐W Long _____

Local Grid Location ☐N ☐E
_____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									
2	--		2	0.5-7.0'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									0-7' hydroexcavated
3	19.2	3 4 4 4	8	7.0-9.0'/ 0-1.6' Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL			1.35						
4	24	3 3 2 3	10	9.0-11'/ 0-0.2' Clay: Same as above. 0.2-1.3' Sand: Dark yellowish brown (10 YR 4/6), fine to very fine, little silt, trace subangular gravel up to 1/2", trace (3) 1/4" clay lenses, poorly sorted,	CL SM CL-ML			2.48						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Boring Number SVE-2

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			10	moist, no odor. 1.3-1.5' Clay: Dark yellowish brown (10 YR 4/4), some silt, some coarse sand, little subangular to	SP CL									
5	15.6	7 6 5 5	12	subround gravel up to 1/4", mostly 1/8", medium plasticity, orange and gray mottling, moist, no odor. 1.5-1.8' Sand: Dark yellowish brown (10 YR 4/6) very fine to fine grained, well sorted, heavy iron staining, moist, no odor.	ML SM-SW			160						
6	19.2	2 3 1 3	14	1.8-2.0' Clay: Yellowish brown (10 YR 5/4), some silt, trace very fine sand, trace organics, high plasticity, soft (HP - 1-1.5), moist, no odor. 11-13'/ 0-0.1' Chert Rock. 0.1-0.3' Silt: Gray (10 YR 5/1) some very fine sand, trace rounded gravel pieces up to 1/2" black staining, slight odor, moist.	SM-SW			220						
7	18	3 3 4 5	16	0.3-0.4' Sandstone, rock. 0.4-1.3' Sand: Light yellowish brown (10 RY 6/4), very fine, little silt, little subround to subangular gravel up to 1", poorly sorted, moist, no odor.	SM-SW			40.78						
8	13.2	WH for 12" 5 4	18	13-15'/ 0-1.6' Sand: Light yellowish brown (10 RY 6/4), very fine, little silt, little subround to subangular gravel up to 1", poorly sorted, moist, no odor. 15-17'/ 0-1.5' Sand: Light yellowish brown (10 RY 6/4), very fine, little silt, little subround to subangular gravel up to 1", poorly sorted, wet, no odor.	SM-SW			1.78						
			20	17-19'/ 0-1.1' Sand: Light yellowish brown (10 RY 6/4), very fine, little silt, little subround to subangular gravel up to 1", poorly sorted, wet, no odor. EOB @ 19'										
			22											
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE -3

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/24/12	02/24/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ Lat _____
NW 1/4 of SW 1/4 of Section 5 ,T 7 N,R 10 ☒E ☐W Long _____
Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									
2	--		2	0.5-5.0'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									0-6' hydroexcavated
			4											
3	--			5.0-6.0'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, trace subround to subangular gravel up to 1", moderately sorted moist, no odor.	SP			hydro						
4	16.8	2344	6	6.0-8.0'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, trace subround to subangular gravel up to 1", moderately sorted moist, no odor.	SP			1.38						
5	18	4465	8	8.0-10.0'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, trace subround to subangular gravel up to 1", moderately sorted moist, no odor.	SP			0.78						
6	20.4	3787	10	10.0-12.0'/ Sand: Yellowish brown (10 YR 5/6), very fine	SP			1.45						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm ARCADIS 126 N. Jefferson St., Suite 400 Milwaukee, WI (414) 276-7742

Boring Number SVE-3

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	grained, trace silt, trace subround to subangular gravel up to 1", moderately sorted moist, no odor.										
7	20.4	6 7 9 9		12-14'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, trace subround to subangular gravel up to 1", moderately sorted moist, no odor.	SP			0.70						
8	13.2	7 11 5 4	14	14-16'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, trace subround to subangular gravel up to 1", moderately sorted moist, no odor.	SP			1.82						
9	18	8 8 5 7	16	16-18'/ Sand: Yellowsih brown (10 YR 5/6), very fine grained, trace silt, trace subround to subangular gravel up to 1", wet, no odor.	SP			3.21						
10	15.6	4 4 6 10	18	18-20'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace subround to subangular gravel up to 1", wet no odor.	SM			1.37						
11	14.4	WH for 12" 4 8 8	20	20-22'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace subround to subangular gravel up to 1", wet no odor.	SM			3.07						
			22	EOB @ 22'										
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE -4

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/24/12	02/24/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ Lat _____
NW 1/4 of SW 1/4 of Section 5 ,T 7 N,R 10 ☒ E ☐ W Long _____

Local Grid Location ☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									0-6' Hydroexcavated
2	--		2	0.5-5.0'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									
3	--		4	5.0-6.0'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 1/2", mostly 1/8", some silt, poorly sorted moist, no odor.	SM-SW									
4	18	4 7 14 17	6	6.0-8.0'/ 0-1.5' Sand, Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 1/2", mostly 1/8", some silt, poorly sorted moist, no odor.	SM-SW			0.58						
5	12	5 7 8 8	8	8.0-10.0'/ 0-2.0' Sand, Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 1/2", mostly 1/8", some silt, poorly sorted moist, no odor.	SM-SW			0.68						
6	9.6	8 12 13 9	10	10.0-12.0'/ 0-0.8' Sand: Yellowish brown (10 YR 5/6), very fine	SM-SW			1.03						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	grained, little subround to subangular gravel up to 2", some silt, poorly sorted, moist, no odor.										
7	19.2	6 9 9 12		12-14'/ 0-1.6' Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 2", some silt, poorly sorted, moist, no odor.	SM-SW			1.71						
8	16.8	17 13 11 8	14	14-16'/ 0-1.4' Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 2", some silt, poorly sorted, moist, no odor.	SM-SW			2.11						
9	19.2	4 5 5 7	16	16-18'/ 0-1.6' Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 2", some silt, poorly sorted, wet, no odor.	SM-SW			1.57						
			18	EOB @ 18'										
			20											
			22											
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE -5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/24/12	02/24/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ ☒E ☐W Lat _____ Long _____
NW 1/4 of SW 1/4 of Section 5, T 7 N,R 10

Local Grid Location ☐N ☐E _____ Feet ☐S _____ Feet ☐W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	(PID)/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with gravel bed.										0-6' Hydroexcavated
2	--		2	0.5-6.0'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									
			4											
			6											
3	24	4 6 11 15	8	6.0-8.0'/ 0-0.2' Silt: Dark yellowish brown (10 YR 4/6), soft, noncohesive, moist, no odor. 0.2-2.0' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, little silt, little subangular to subround gravel up to 1", loose, moist, no odor.	ML SM-SW			0.87						
4	24	9 8 8 7	10	8.0-10.0'/ 0-2.0' Sand, dark yellowish brown (10 YR 4/6), very fine grained, little silt, little subangular to subround gravel up to 1", loose, moist, no odor.	SM-SW			1.37						
5	12	7 8 37 20		10.0-12.0'/ 0-1.0' Sand, dark yellowish brown (10 YR 4/6), very	SM-SW			1.33						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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madison-kipp/WI001283/graphics/logs/sve5.ai

Boring Number SVE-5

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	fine grained, little silt, little subangular to sub-round gravel up to 1", poorly sorted, loose, moist, no odor.										
6	16.8	12 9 8 8		12-14'/ 0-1.4' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, little silt, little subangular to sub-round gravel up to 1", poorly sorted, loose, moist, no odor.	SM-SW			1.58						
7	24	6 8 10 9	14	14-16'/ 0-2.0' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, little silt, little subangular to sub-round gravel up to 1", poorly sorted, loose, moist, no odor.	SM-SW			1.46						
8	24	9 14 8 9	16	16-18'/ 0-2.0' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, little silt, little subangular to sub-round gravel up to 1", poorly sorted, loose, moist, no odor.	SM-SW			1.77						
9	24	6 8 5 10	18	18-20'/ 0-2.0' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, little silt, little subangular to sub-round gravel up to 1", poorly sorted, loose, wet, no odor.	SM-SW			1.81						
			20	EOB @ 20'										
			22											
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE-6

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/25/12	02/25/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ Lat _____
NW 1/4 of SW 1/4 of Section 5 ,T 7 N,R 10 ☒ E ☐ W Long _____

Local Grid Location ☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	–		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									0-6' Hydroexcavated
2	–		2	0.5-4.5'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									
3	–		4	4.5-6.0'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 3/4", mostly 1/4", trace to little silt, poorly sorted, loose, moist, no odor.	SM-SW									
4	12	3344	6	6.0-8.0' 0-1.0' Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 3/4", mostly 1/4", trace to little silt, poorly sorted, loose, moist, no odor.	SM-SW			5.34						
5	19.2	8777	8	8.0-10.0' 0-1.6' Sand: Yellowish brown (10 YR 5/6), very fine grained, little subround to subangular gravel up to 3/4", mostly 1/4", trace to little silt, poorly sorted, loose, moist, no odor.	SM-SW			5.33						
6	18	3457	10	10.0-12.0'/ 0-1.5' Sand, yellowish brown (10 YR 5/6), very fine	SM-SW			6.12						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Boring Number SVE-6

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	grained, little subround to subangular gravel up to 1", trace to little silt, poorly sorted, loose, moist, no odor.										
6	7.2	20 33 18 19	14	12-14'/ 0-0.6' Yellowish bronw (10 YR 5/6), very fine grained, little subround to subangular gravel up to 1", trace to little silt, poorly sorted, loose, moist, no odor, rock in shoe.	SM-SW			5.98						
7	NR	8 12 12 12	16	14-16'/ No recovery.										
8	20.4	20 14 16 17	18	16-18'/ 0-1.7' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, some silt, trace clay, trace sub-angular to subround gravel up to 1/2", poorly sorted cohesive, moist, no odor.	SM			8.50						
9	24	6 6 9 4	20	18-20'/ 0-2.0' Sand: Dark yellowish brown (10 YR 4/6), very fine grained, some silt, trace clay, trace sub-angular to subround gravel up to 1/2", poorly sorted cohesive, wet, no odor.	SM			6.42						
			22	EOB @ 20'										
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE-7

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/25/12	02/25/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ ☒ E ☐ W
NW 1/4 of SW 1/4 of Section 5, T 7 N,R 10
Lat _____ Long _____
Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									0-6' Hydroexcavated
2	--		2	0.5-5.5'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									
3	--		4	5.5-6.0'/ Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, little subround to subangular gravel up to 1", mostly 1/4", poorly sorted, loose, moist, no odor.	SW									
4	24	5555	6	6.0-8.0' 0-2.0' Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, little subround to subangular gravel up to 1", mostly 1/4", poorly sorted, loose, moist, no odor.	SW			4.09						
5	21.6	6887	8	8.0-10.0' 0-1.8' Sand: Yellowish brown (10 YR 5/6), very fine grained, trace silt, little subround to subangular gravel up to 1", mostly 1/4", poorly sorted, loose, moist, no odor.	SW			4.60						
6	19.2	978 11	10	10.0-12.0'/ 0-1.3' Sand: Yellowish brown (10 YR 5/6), very fine	SW			3.55						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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madison-kipp/WI001283/graphics/logs/sve7.ai

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12	grained, trace silt, little subround to subangular gravel up to 1", mostly 1/4", poorly sorted, loose, moist, no odor. 1.3-1.5' Sand: Very pale brown (10 YR 7/4), fine grained, well sorted, loose, moist, no odor.	SP SM-SW									
7	1.2	20 17 19 25		1.5-1.6' Sand: Yellowish brown (10 YR 5/6), little to some silt, little subangular to subround gravel up to 1", mostly 1/4", slightly cohesive, poorly sorted, moist, no odor. 12-14'/ 0-0.1' Sand: Yellowish brown (10 YR 5/6), little to	SM-SW									
8	24	7 7 11 12	14	some silt, little subangular to subround gravel up to 1", mostly 1/4", slightly cohesive, poorly sorted, moist, no odor. 14-16'/ 0-2.0' Sand: Yellowish brown (10 YR 5/6), little to some silt, little subangular to subround gravel up to 1", mostly 1/4", slightly cohesive, poorly sorted, moist, no odor.	SM-SW			6.16						
9	24	8 11 14 16	16	16-18'/ 0-2.0' Sand: Yellowish brown (10 YR 5/6), little to some silt, little subangular to subround gravel up to 1", mostly 1/4", slightly cohesive, poorly sorted, moist, no odor.	SM-SW			8.05						
10	18	19 23 25 18	18	18-20'/ 0-1.5' Sand: Yellowish brown (10 YR 5/6), little to some silt, little subangular to subround gravel up to 1", mostly 1/4", slightly cohesive, poorly sorted, moist, no odor.	SM-SW			7.03						
11	19.2	6 9 15 18	20	20-22'/ 0-1.6' Sand: Yellowish brown (10 YR 5/6), little to some silt, little subangular to subround gravel up to 1", mostly 1/4", slightly cohesive, poorly sorted, wet, no odor.	SM-SW			7.60						
			22	EOB @ 22'										
			24											
			26											
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE-8

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/25/12	02/25/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ ☒ E ☐ W
NW 1/4 of SW 1/4 of Section 5, T 7 N,R 10
Lat _____ Long _____
Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									0-6' Hydroexcavated
2	--		2	0.5-5.0'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	CL									
			4											
3	--			5.0-6.0'/ Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace subangular	SM									
4	14.4	2 4 3 5	6	to subround gravel up to 3/4", mostly 1/8", loose, poorly sorted, moist, no odor. 6.0-8.0' Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace subangular to subround gravel up to 3/4", mostly 1/8", loose, poorly sorted, moist, no odor.	SM			10.19						
5	9.6	4 6 7 11	8	8.0-10.0' Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace subangular to subround gravel up to 3/4", mostly 1/8", loose, poorly sorted, moist, no odor.	SM			14.00						
6	NR	6 8 10 12	10	10.0-12.0'/ No recovery.	--			--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

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Boring Number SVE-8

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12											
7	9.6	8 8 9 7		12-14'/ Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace subangular to subround gravel up to 3/4", mostly 1/8", loose, poorly sorted, moist, no odor.	SM			12.40						
			14											
8	20.4	4 4 12 8		14-16'/ Sand: Brownish yellow (10 YR 6/6), very fine grained, some silt, trace clay, trace subround to subangular gravel up to 1", mostly 1/8"-1/4", cohesive, moist, no odor.	SM			6.81						
			16											
9	24	17 19 21 21		16-18'/ Sand: Brownish yellow (10 YR 6/6), very fine grained, some silt, trace clay, trace subround to subangular gravel up to 1", mostly 1/8"-1/4", cohesive, moist, no odor.	SM			7.47						
			18											
10	19.2	17 20 18 21		18-20'/ Sand: Brownish yellow (10 YR 6/6), very fine grained, some silt, trace clay, trace subround to subangular gravel up to 1", mostly 1/8"-1/4", cohesive, moist, no odor.	SM			9.47						
			20											
11	15.6	8 27 25 18		20-22'/ Sand: Brownish yellow (10 YR 6/6), very fine grained, some silt, trace clay, trace subround to subangular gravel up to 1", mostly 1/8"-1/4", cohesive, wet seam from 0.6-0.8", moist, no odor.	SM			7.22						
			22											
12	21.6	32 50 45 30		22-24'/ 0-1.8' Sand: Brownish yellow (10 YR 6/6), very fine grained, some silt, trace clay, trace subround to subangular gravel up to 1", mostly 1/8"-1/4", cohesive, moist, no odor.	SM			9.21						
			24											
13	19.2	8 21 50 43		24-26'/ 0-1.6' Sand: Brownish yellow (10 YR 6/6), very fine grained, some silt, trace clay, trace subround to subangular gravel up to 1", mostly 1/8"-1/4", cohesive, wet at 0.7", no odor.	SM			10.42						
			26	EOB @ 26'										
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001283.0001.00004		SVE-9

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Beauford Last Name Jones Firm Giles Engineering & Associates, Inc.	02/25/12	02/25/12	Hollow Stem Auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S☐/C☐/N☐ ☒ E ☐ W
NW 1/4 of SW 1/4 of Section 5, T 7 N,R 10 Lat _____ Long _____

Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	--		0	0-0.5'/ Asphalt with coarse gravel base.	Asphalt									0-6' Hydroexcavated
2	--		2	0.5-5.0'/ Clay: Dark yellowish brown (10 YR 4/6), some silt, trace very fine sand, trace to little organics (roots/ sticks), medium plasticity, soft (HP = 1.5-2), orange, gray and black mottling, moist, no odor.	SM									
			4											
3	--			5.0-6.0'/ Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace subangular	SM									
4	14.4	2234	6	to subround gravel up to 1", mostly 1/8 to 1/4", loose, moist, no odor. 6.0-8.0' 0-1.2' Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace sub-angular to subround gravel up to 1", mostly 1/8 to 1/4", loose, moist, no odor.	SM			6.61						
5	12	3345	8	8.0-10.0' 0-1.0' Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace sub-angular to subround gravel up to 1", mostly 1/8 to 1/4", loose, moist, no odor.	SM			8.90						
6	7.2	1145	10	10.0-12.0'/ 0-0.6' Sand: Yellowish brown (10 YR 5/6), very fine	SM			9.46						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742

Boring Number SVE-9

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
			12											
7	19.2	4 5 6 8		12-14'/ 0-1.6' Sand: Yellowish brown (10 YR 5/6), very fine to fine grained, mostly fine, little silt, trace sub-angular to subround gravel up to 1", mostly 1/8 to 1/4", loose, moist, no odor.	SM			11.76						
8	18	15 8 8 5	14	14-16'/ 0-1.5' Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace clay, trace subangular to subround gravel up to 1", mostly 1/2", cohesive, moist, no odor.	SM			13.80						
9	20.4	9 12 11 13	16	16-18'/ 0-1.7' Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace clay, trace subangular to subround gravel up to 1", mostly 1/2", cohesive, moist, no odor.	SM			18.55						
10	20.4	9 8 19 11	18	18-20'/ 0-1.7' Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace clay, trace subangular to subround gravel up to 1", mostly 1/2", cohesive, moist, no odor.	SM			16.70						
11	15.6	5 3 9 12	20	20-22'/ 0-1.3' Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace clay, trace subangular to subround gravel up to 1", mostly 1/2", cohesive, moist, no odor.	SM			17.09						
12	24	30 60 32 50 for 5"	22	22-24'/ 0-2.0' Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace clay, trace subangular to subround gravel up to 1", mostly 1/2", cohesive, moist, no odor.	SM			18.33						
13	14.4	26 37 50 for 4"	24	24-26'/ 0-1.2' Sand: Yellowish brown (10 YR 5/6), very fine grained, some silt, trace clay, trace subangular to subround gravel up to 1", mostly 1/2", cohesive, wet, no odor.	SM			24.68						
			26	EOB @ 26'										
			28											

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Madison-Kipp/WI001368.0011.00001		GWE-1

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Todd Last Name Schmalfeldt Firm Cascade Drilling	12/05/13	12/08/13	Mud Rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VN148		GWE-1	_____ Feet	_____ Feet MSL	12 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 400212.55 N, 2144156.97 E S☐/C☐/N☐ E☐ W☐ Lat _____
_____ 1/4 of _____ 1/4 of Section _____ ,T _____ N,R _____ Long _____

Local Grid Location ☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
113125320	Dane	13	Madison

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1			0	0-19'/ 0-19.0' Overburden (blind drill).										
2			19	19-34'/ 19.0-34.0' Weathered Bedrock (blind drill).										
3			34	34-186.2'/ 34.0-186.2' Competent Bedrock (blind drill).										
			186.2											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Dail Kl

Firm ARCADIS
126 N. Jefferson St., Suite 400
Milwaukee, WI (414) 276-7742